

A stylized, semi-transparent globe is positioned on the left side of the slide. It features a grid of latitude and longitude lines in a light gray color. The globe's surface is divided into irregular shapes, some of which are filled with a light green color, while others are left white, creating a map-like appearance.

Introduction to Reapportionment and Redistricting in Hawaii

Summer/Fall 2001

Reapportionment Project

Environmental Systems Research Institute - Consultants

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grid of grey lines representing latitude and longitude. It is positioned in the top-left corner of the slide.

R2001: Topics

- **Reapportionment Commission**
- **Reapportionment and Redistricting 101**
- **Redistricting Guidelines**
- **Federal Population Base**
- **Redistricting Example**
- **State Population Base**
- **Basic Island Units**



R2001: Topics

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- **Basic Island Units**

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grey grid of latitude and longitude lines. It is positioned in the top-left corner of the slide.

Reapportionment Commission

- **9 members on Commission**
- **16 members on Advisory Council**
- **100 days to generate plan for public review**
- **Then 50 days for public comments**
- **150 total days**
- **First met on 22 May**
- **2nd meeting on 29 May**
- **Chair selected on 30 May**
- **100 days is September 7th**
- **150 days is October 27th**



R2001: Topics

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R2001: R&R 101

- **A complete census of the US population occurs every decade**
- **Redistricting is based on one person one vote**
- **District lines are moved to account for demographic and population shifts and allow equal representation**
- **Where district lines are moved will impact future election results**



R2001: R&R 101

- **Tiger Line 2000 was released in January**
- **Tiger Line only contains geography**
- **286 census tracts in Hawaii**
- **Over 18,000 census blocks in Hawaii**
- **The PL94-171 population data was released in March**
- **The PL data contains total population counts, racial breakdowns**
- **The PL data does not contain income, age group, household, education data, etc.**



R2001: R&R 101

- **Here is a simple example to explain the difference between**
 - **Reapportionment**
 - **Redistricting**
- **Simple single island example**
 - **800,000 population**
 - **2 districts**
 - **Reapportionment tells us to balance the population:**
 - **400,000 persons per district**
 - 400,000 in District 1**
 - 400,000 in District 2**

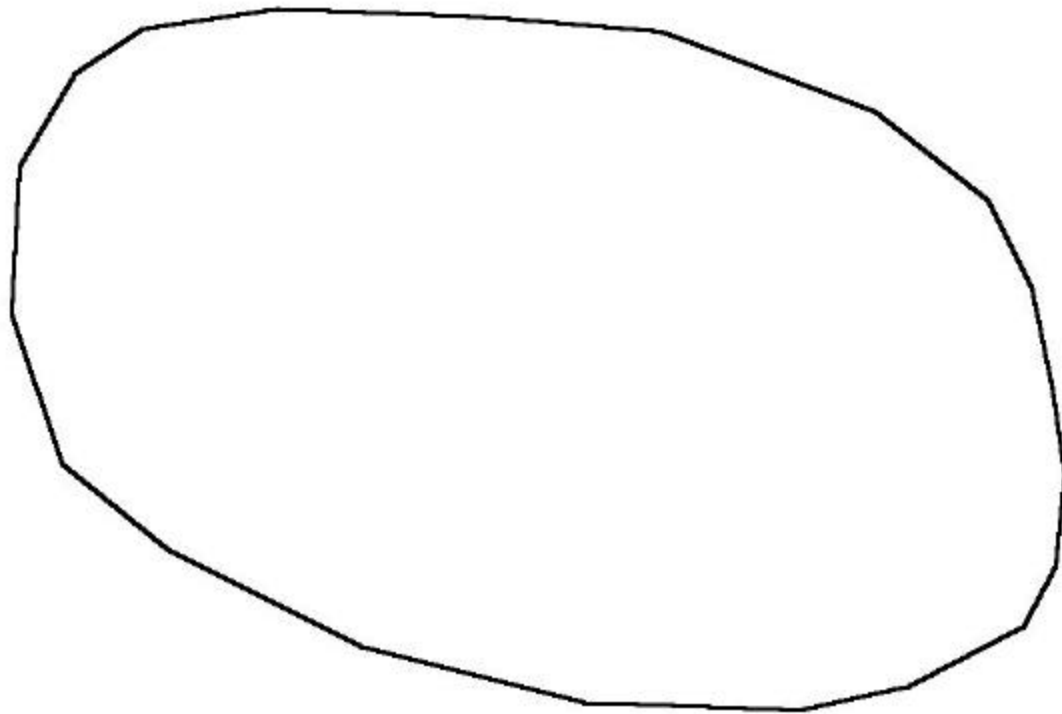


R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?



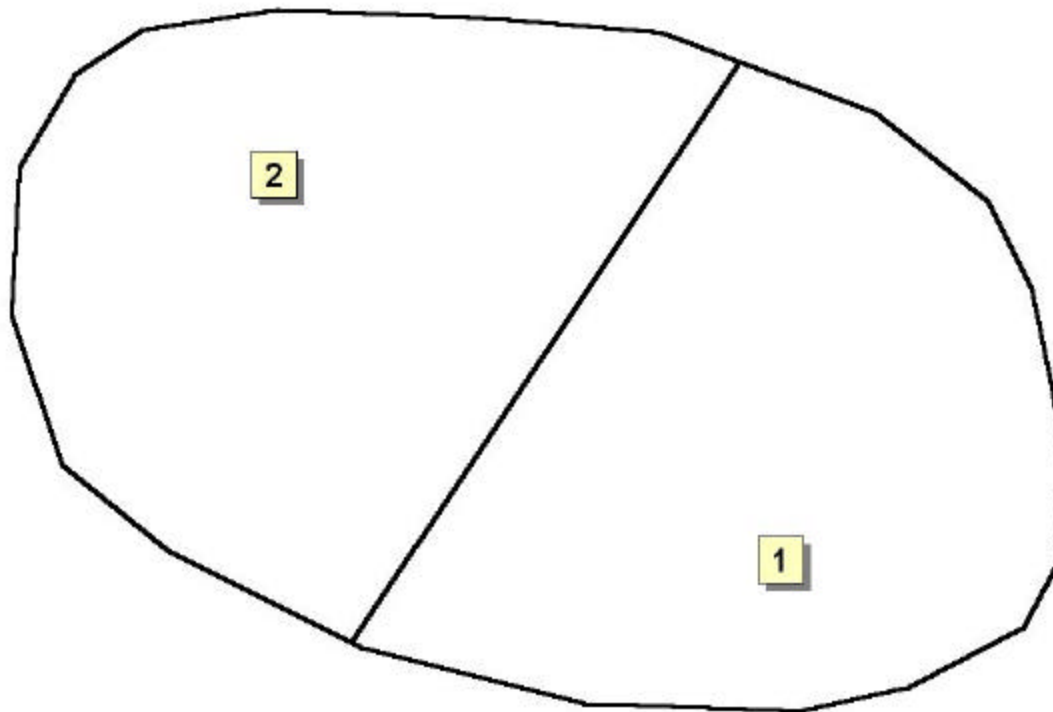
R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?

Like this? Could be.





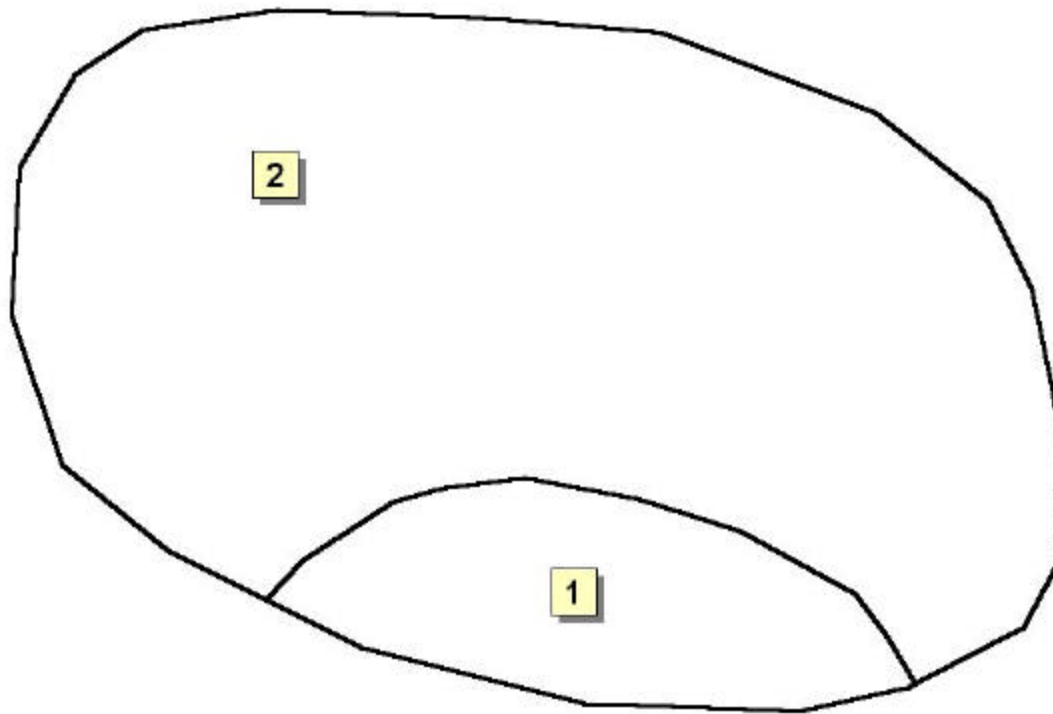
R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?

Like this? Could be.





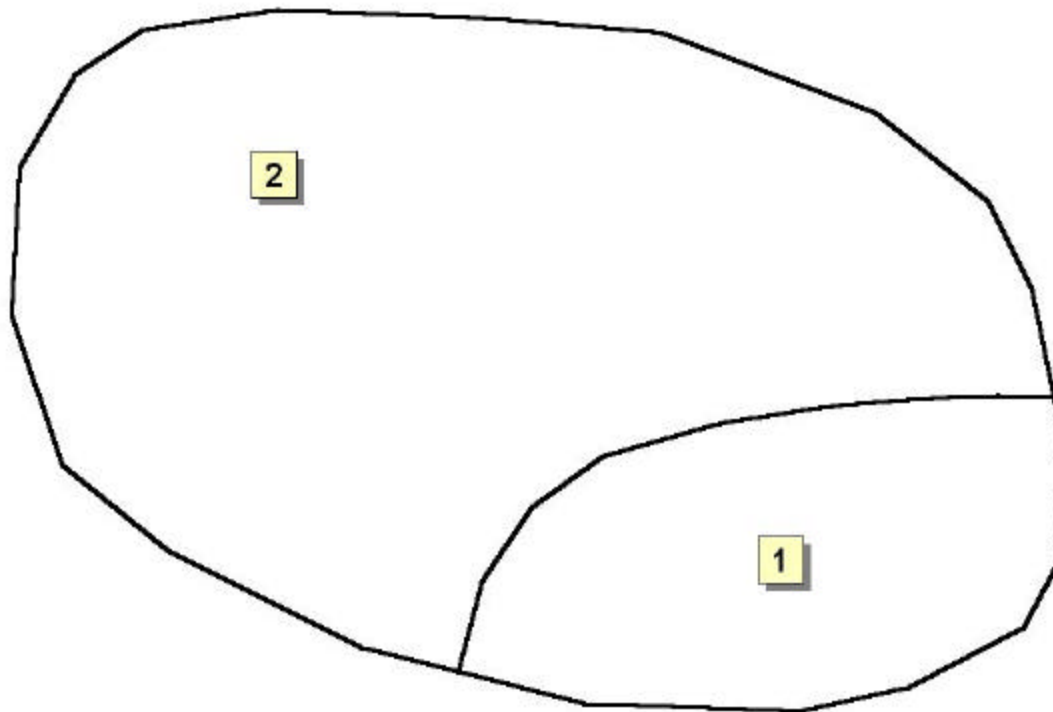
R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?

Like this? Could be, as long as there are 400,000 per.





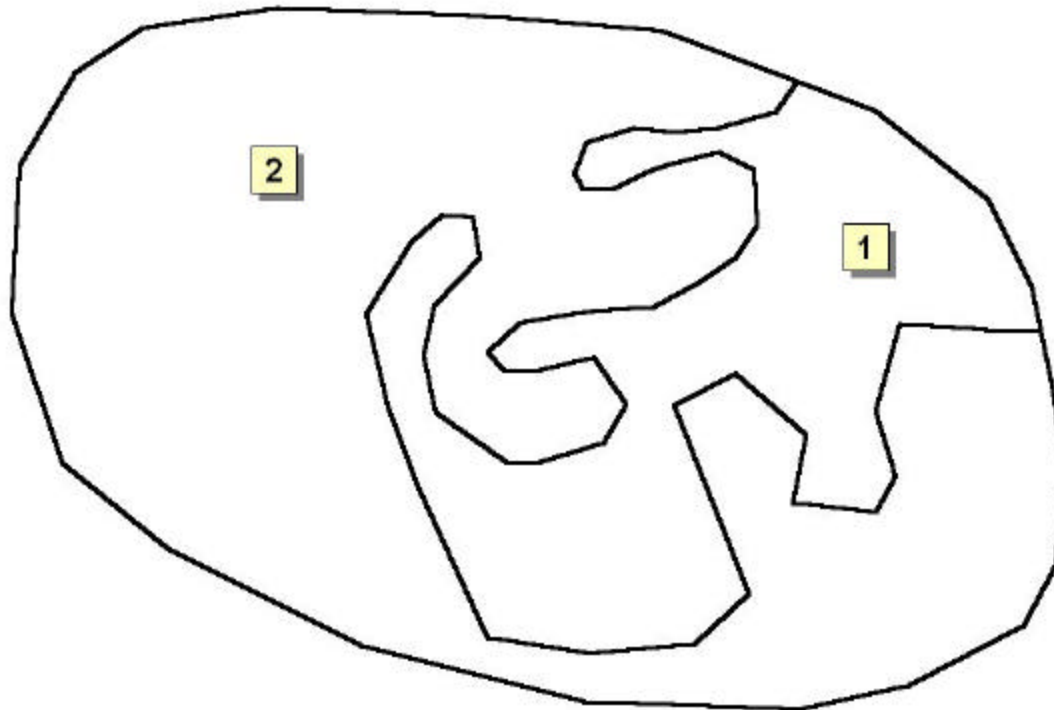
R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?

Like this? Probably not – gerrymandering.





R2001: R&R 101

- **Simple two island example**
 - 800,000 population
 - 2 districts
 - Reapportionment tells us to balance the population:
 - 400,000 persons per district
 - 400,000 in District 1
 - 400,000 in District 2

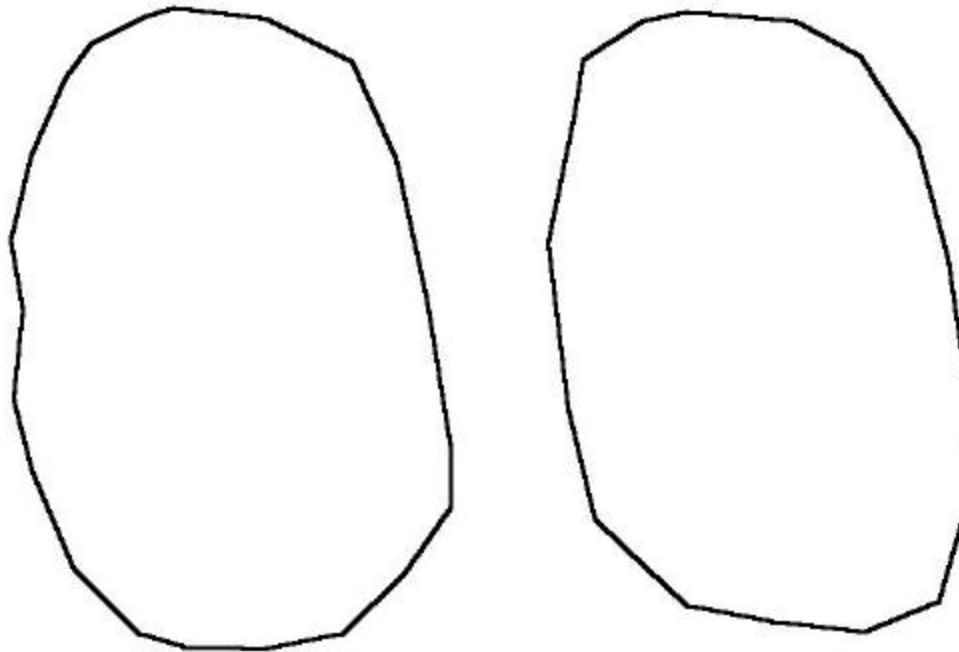


R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?





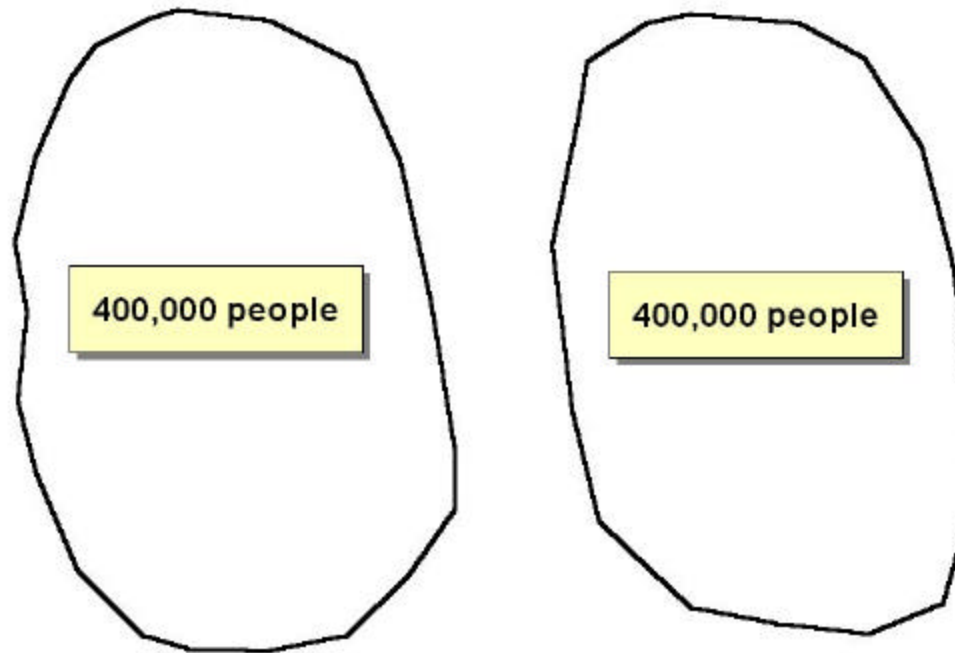
R2001: R&R 101

800,000 people – 2 districts

Reapportionment: 400,000 people per district

Redistricting asks where to draw the line?

No need – each island is one district.





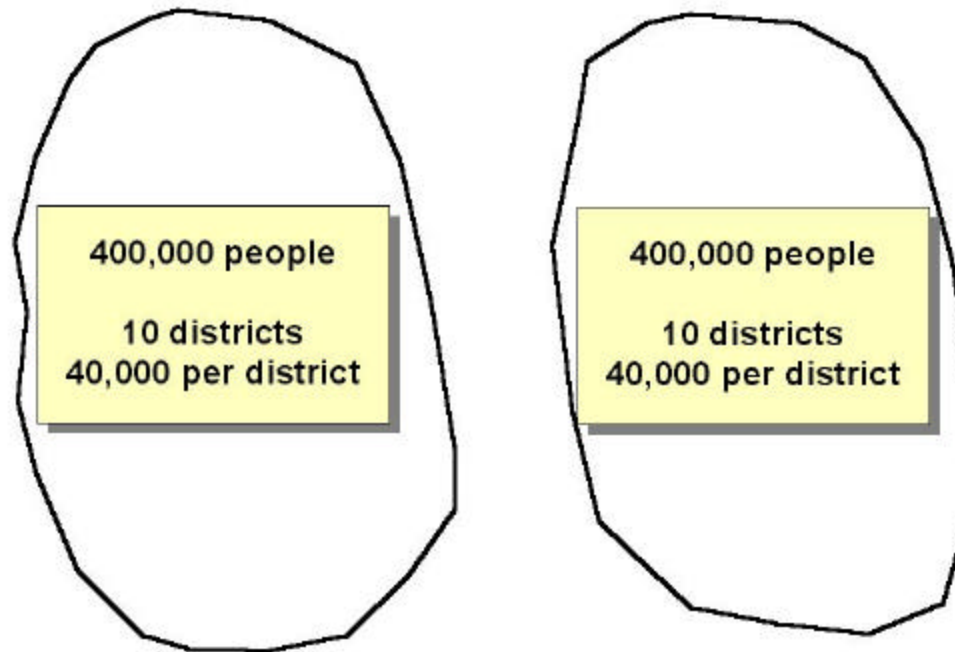
R2001: R&R 101

800,000 people – 20 districts

Reapportionment: 40,000 people per district

Redistricting asks where to draw the line?

Many different ways to get 40,000 per district.





R2001: R&R 101

Ten years later...

... the population has grown to 1,000,000



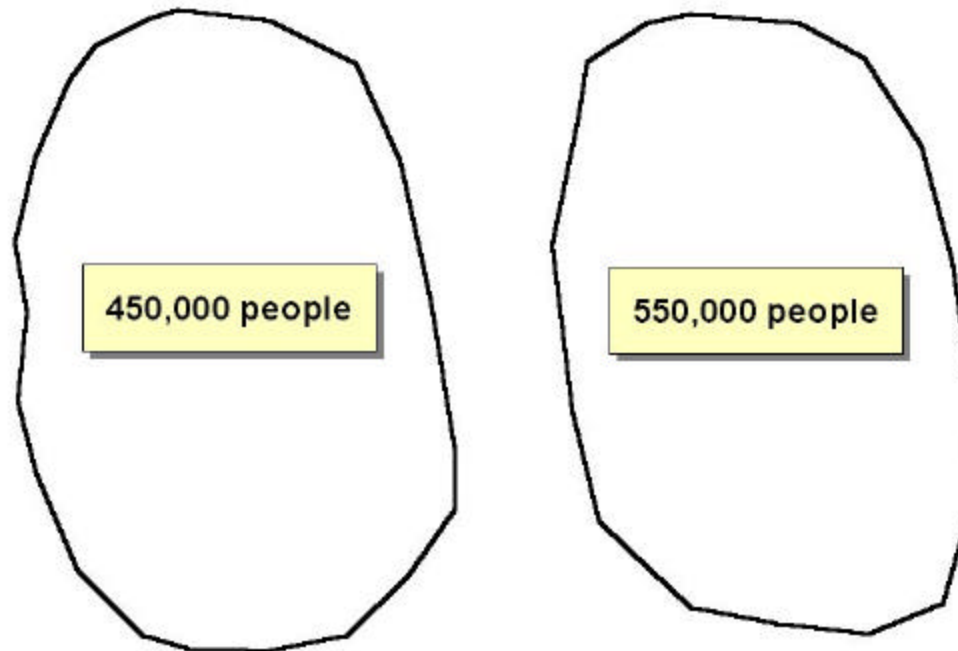
R2001: R&R 101

1,000,000 people – 2 districts

Reapportionment: 500,000 people per district

Redistricting asks where to draw the line?

We need to “canoe” 50,000 people to balance.





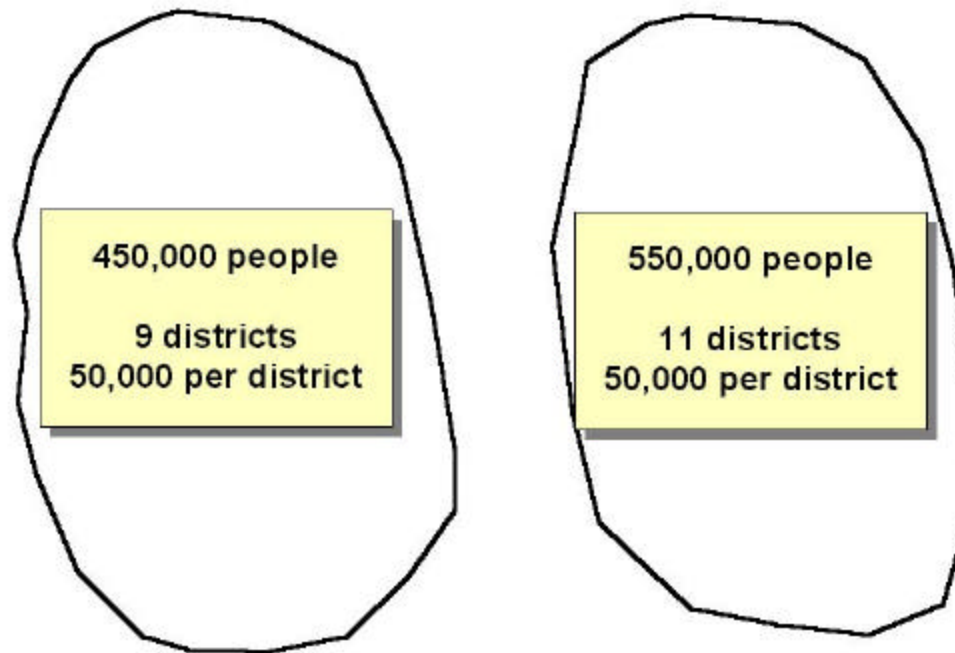
R2001: R&R 101

1,000,000 people – 20 districts

Reapportionment: 50,000 people per district

**Reapportionment says one island has 9 districts,
the other island 11 districts.**

Redistricting asks where to draw the line?



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R2001: Topics

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R2001: Redistricting Guidelines

**The Hawaii Constitution
provides guidelines to
follow when redistricting.**

- **contiguity**
- **compactness**
- **non-submergence**



R2001: Redistricting Guidelines

- **Contiguity**

- **Sharing an edge or boundary**
- **Nearby, neighboring, adjacent**
- **Can walk to all places within a district without crossing the border**
 - **examples...**

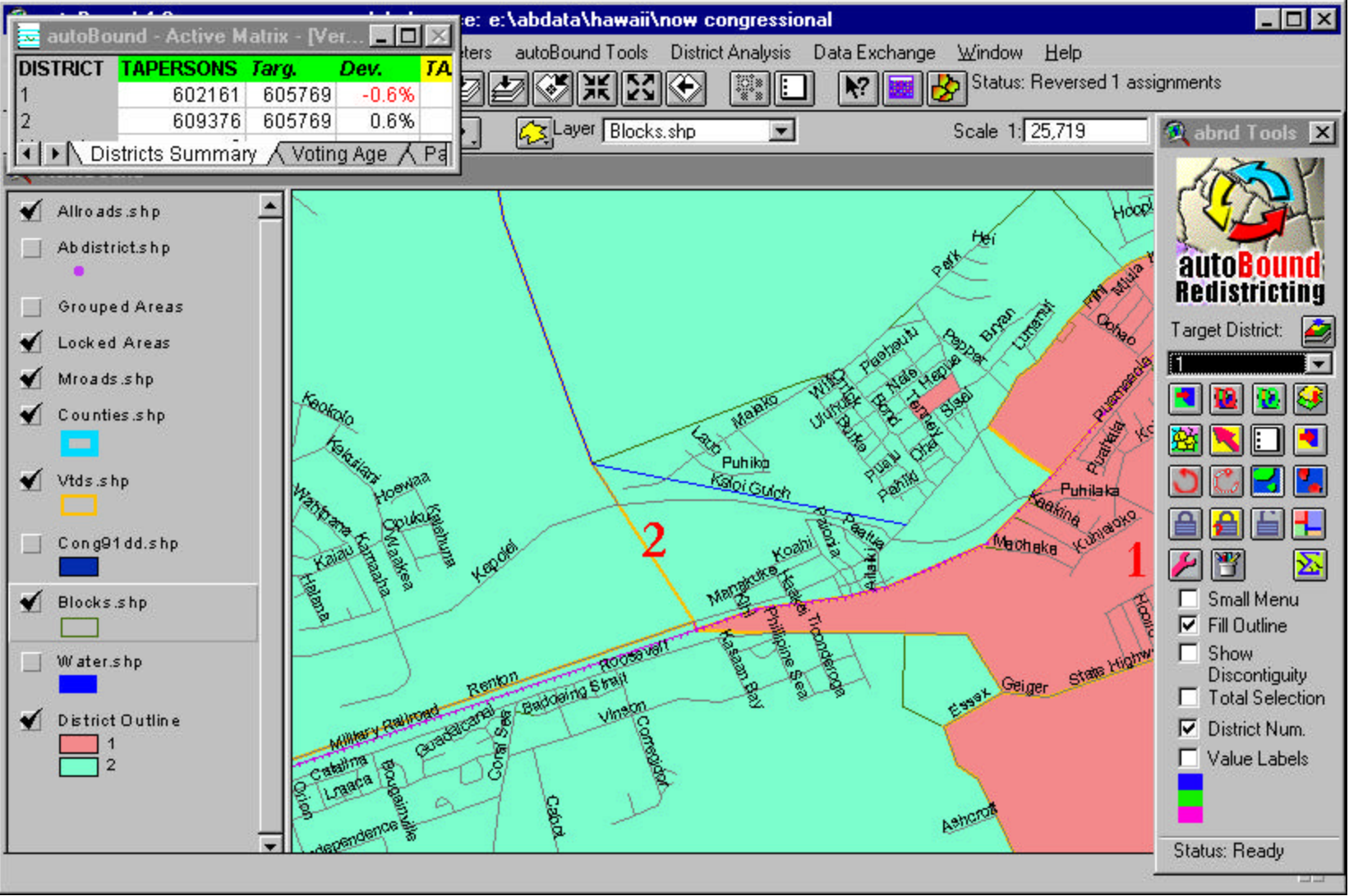


R2001: Redistricting Guidelines

**The following examples
have been created for
explanatory purposes only.**

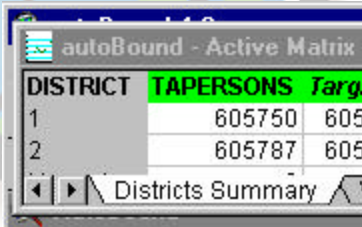
**This is not the plan being
proposed by the Hawaii
Reapportionment
Commission.**

R2001: I



Contiguous? ... no

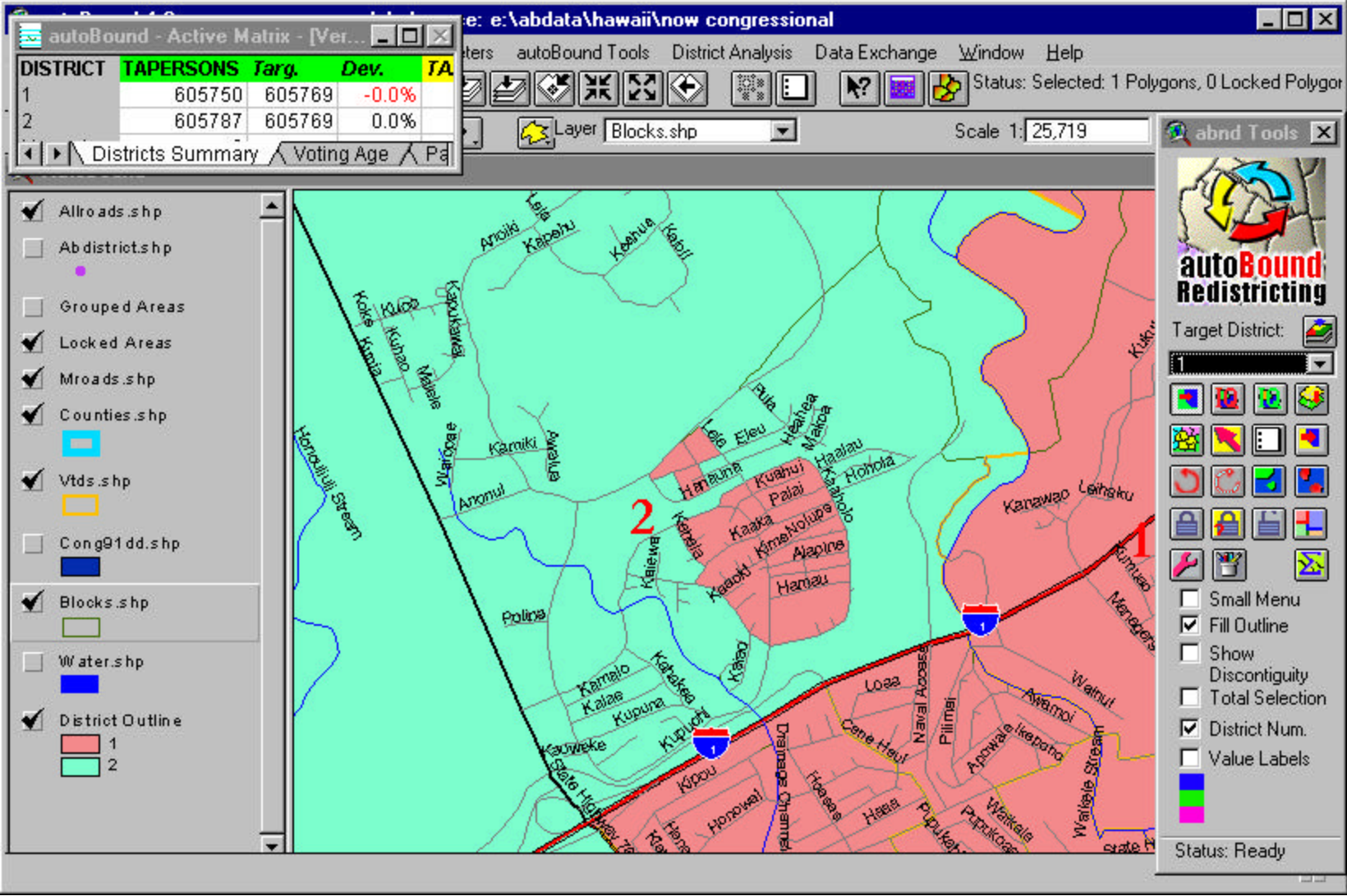
R2001: I



The screenshot shows a software window titled "autoBound - Active Matrix". It contains a table with three columns: "DISTRICT", "TAPERSONS", and "Targ.". The table has two data rows. The first row shows "1" for the district, "605750" for TAPERSONS, and "605" for Targ. The second row shows "2" for the district, "605787" for TAPERSONS, and "605" for Targ. At the bottom of the window, there is a navigation bar with left and right arrow buttons and the text "Districts Summary".

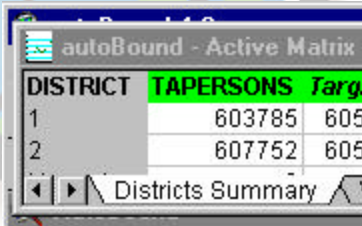
DISTRICT	TAPERSONS	Targ.
1	605750	605
2	605787	605

Navigation: [Left Arrow] [Right Arrow] Districts Summary [Up Arrow]



Contiguous? ... no

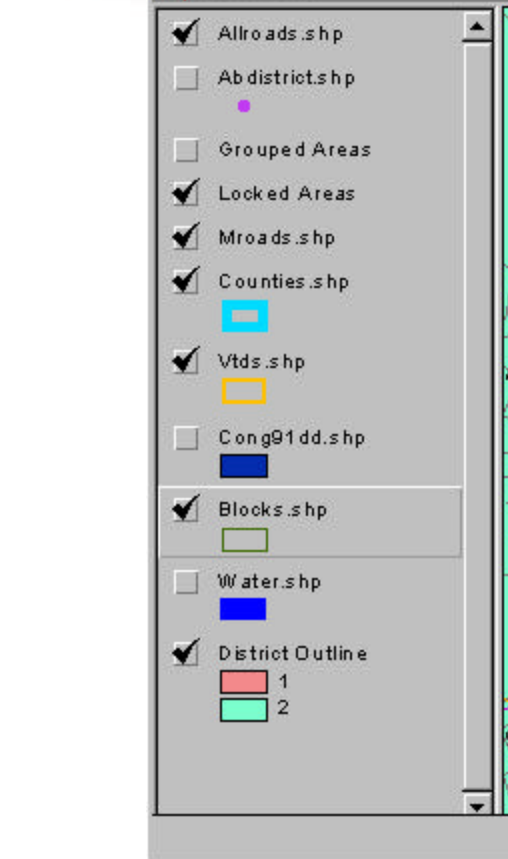
R2001: I



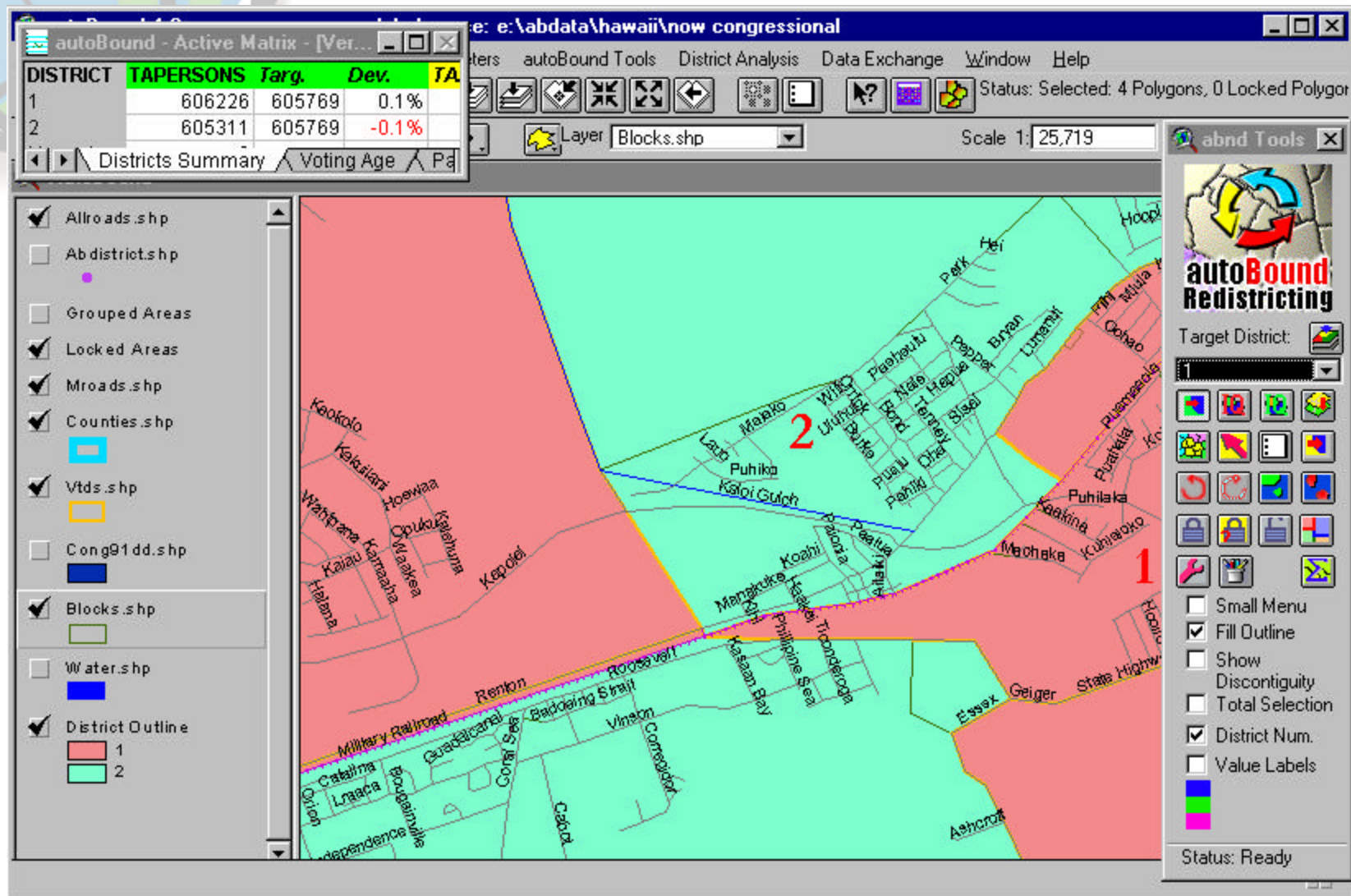
The screenshot shows a window titled "autoBound - Active Matrix". It contains a table with three columns: "DISTRICT", "TAPERSONS", and "Targ.". The table has two data rows. The first row shows "1" for DISTRICT, "603785" for TAPERSONS, and "605" for Targ. The second row shows "2" for DISTRICT, "607752" for TAPERSONS, and "605" for Targ. At the bottom of the window, there is a navigation bar with left and right arrow buttons and the text "Districts Summary".

DISTRICT	TAPERSONS	Targ.
1	603785	605
2	607752	605

Navigation: Districts Summary

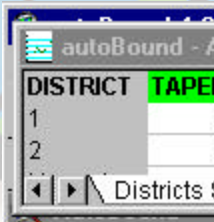


R2001: Redistricting Guidelines



Contiguous? ...no – one point only is not enough.

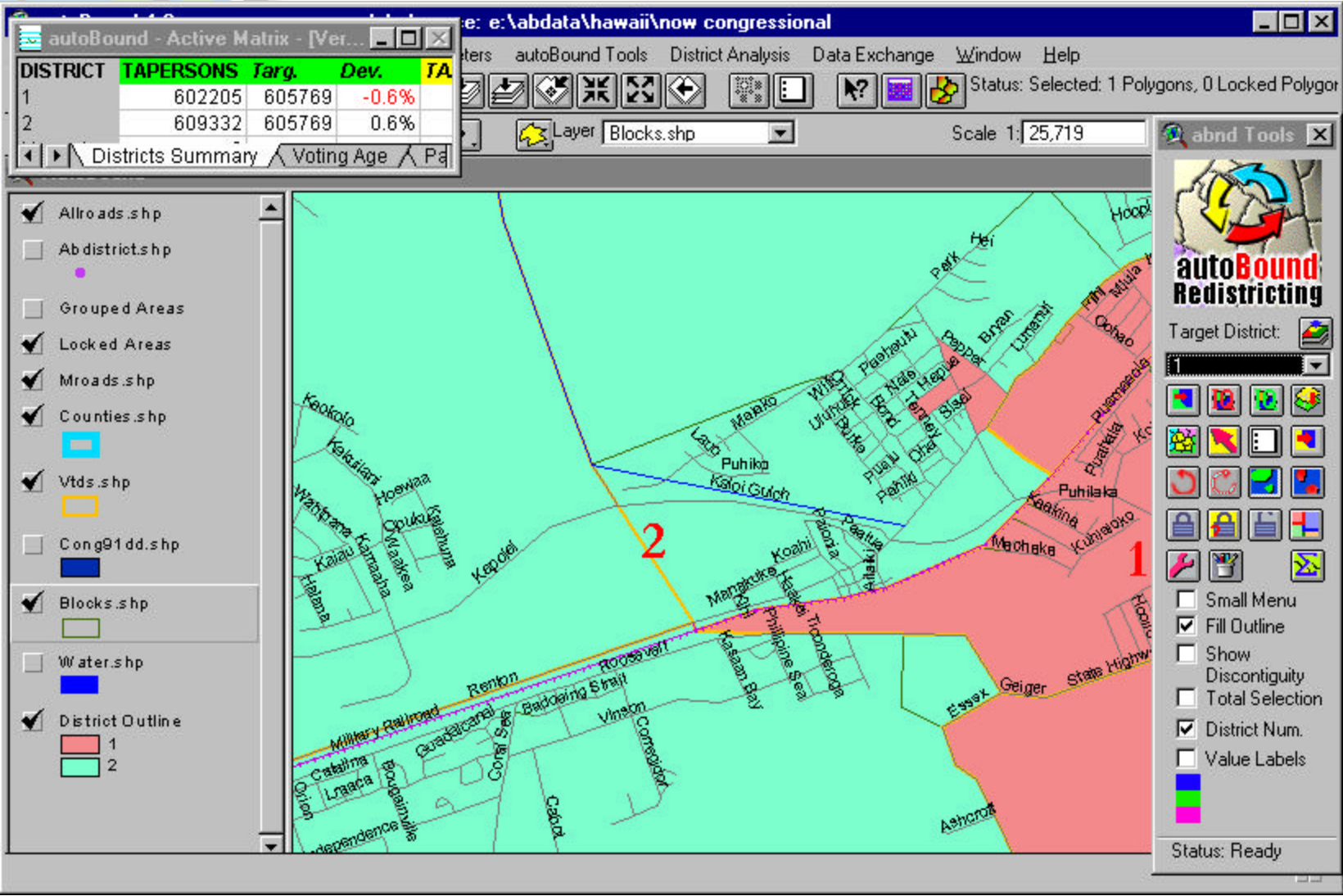
R2001: I



The screenshot shows a window titled "autoBound - Active Matrix". It contains a table with three columns: "DISTRICT", "TAPERSONS", and "Targ.". The table has two data rows. The first row shows "1" for DISTRICT, "602205" for TAPERSONS, and "605" for Targ. The second row shows "2" for DISTRICT, "609332" for TAPERSONS, and "605" for Targ. At the bottom of the window, there is a navigation bar with left and right arrow buttons and the text "Districts Summary".

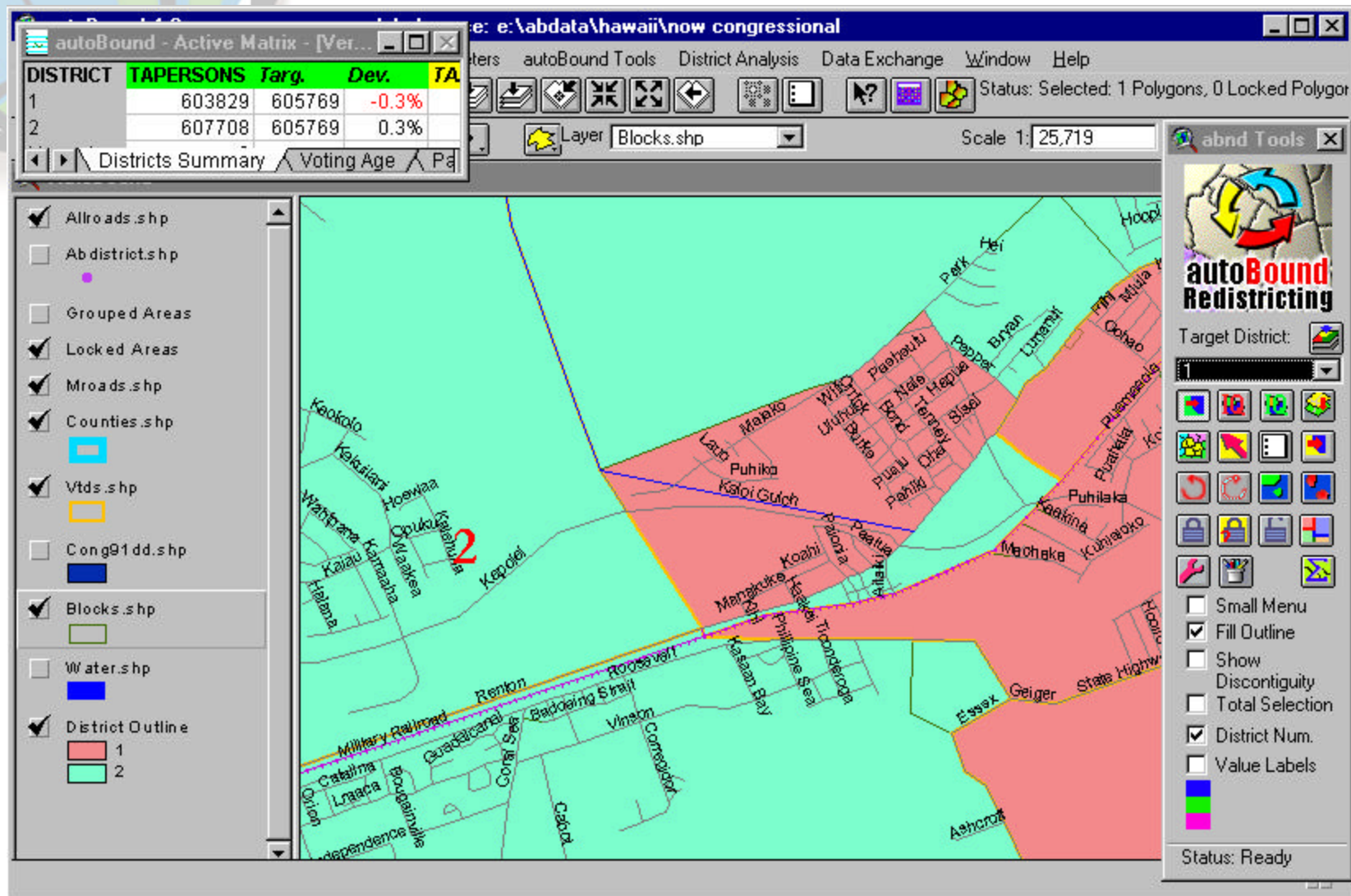
DISTRICT	TAPERSONS	Targ.
1	602205	605
2	609332	605

Navigation: [Left Arrow] [Right Arrow] Districts Summary [Close Button]



Contiguous? ... yes

R2001: Redistricting Guidelines



Contiguous? ... yes – but not very compact.

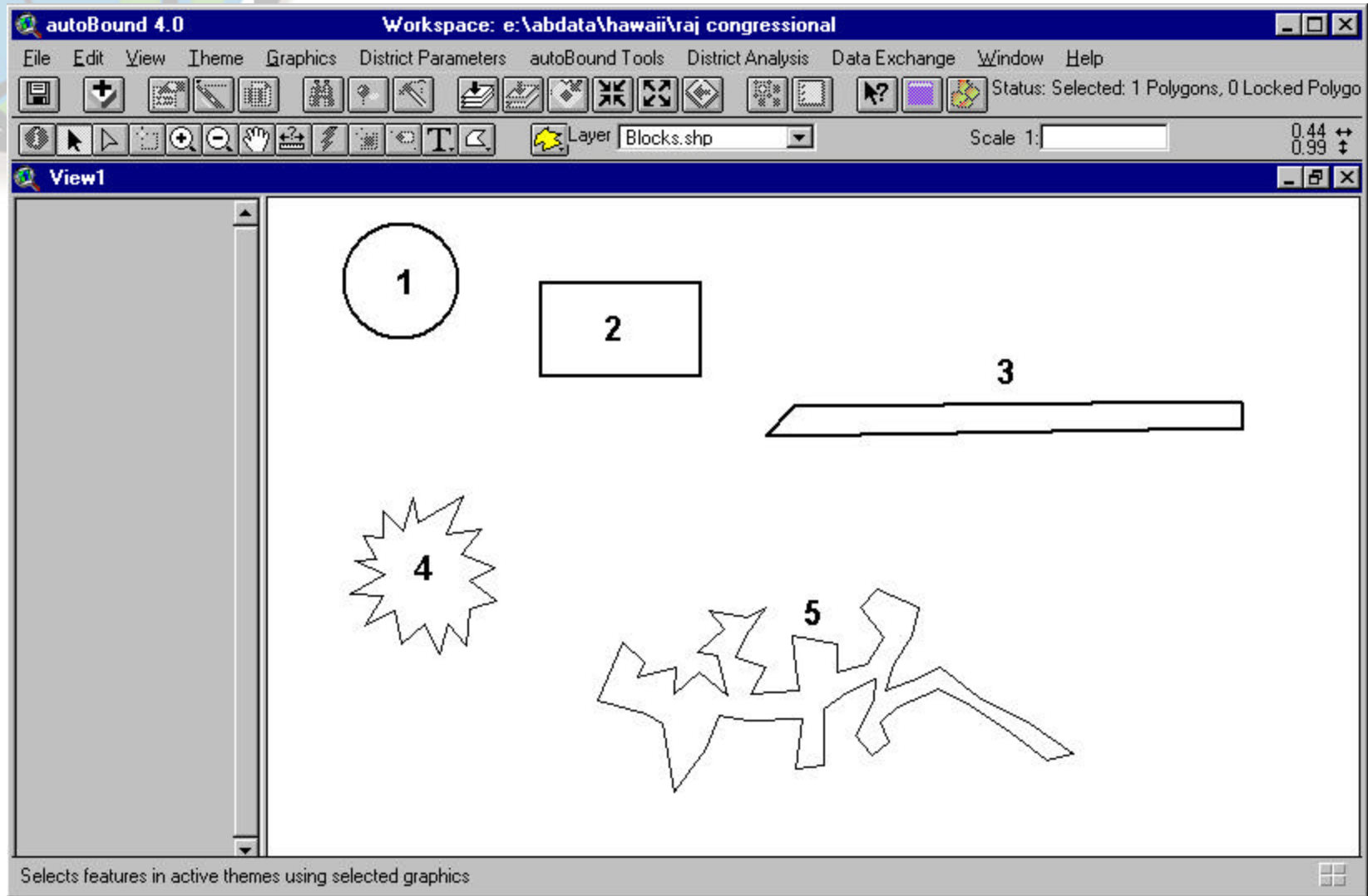


R2001: Redistricting Guidelines

- **Compactness**

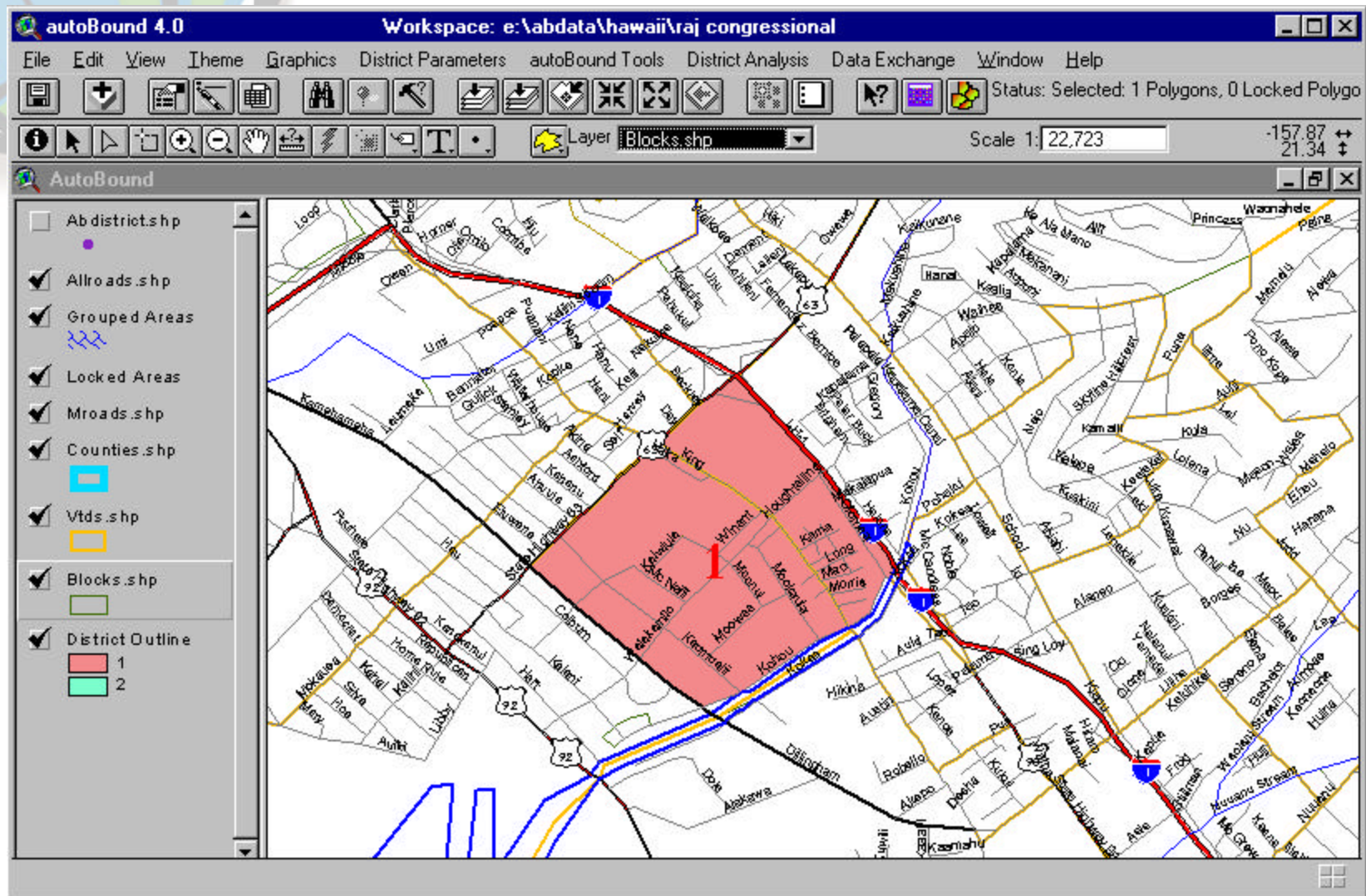
- Closely and firmly united or packed together
- Packed into a relatively small space
- Two views:
 - Geometrically compact
 - How does it look? Like a circle (compact) or like a snake (not compact)?
 - Functionally compact
 - How does it work? Can you easily move about within the district and get from one part to another?
- examples...

R2001: Redistricting Guidelines



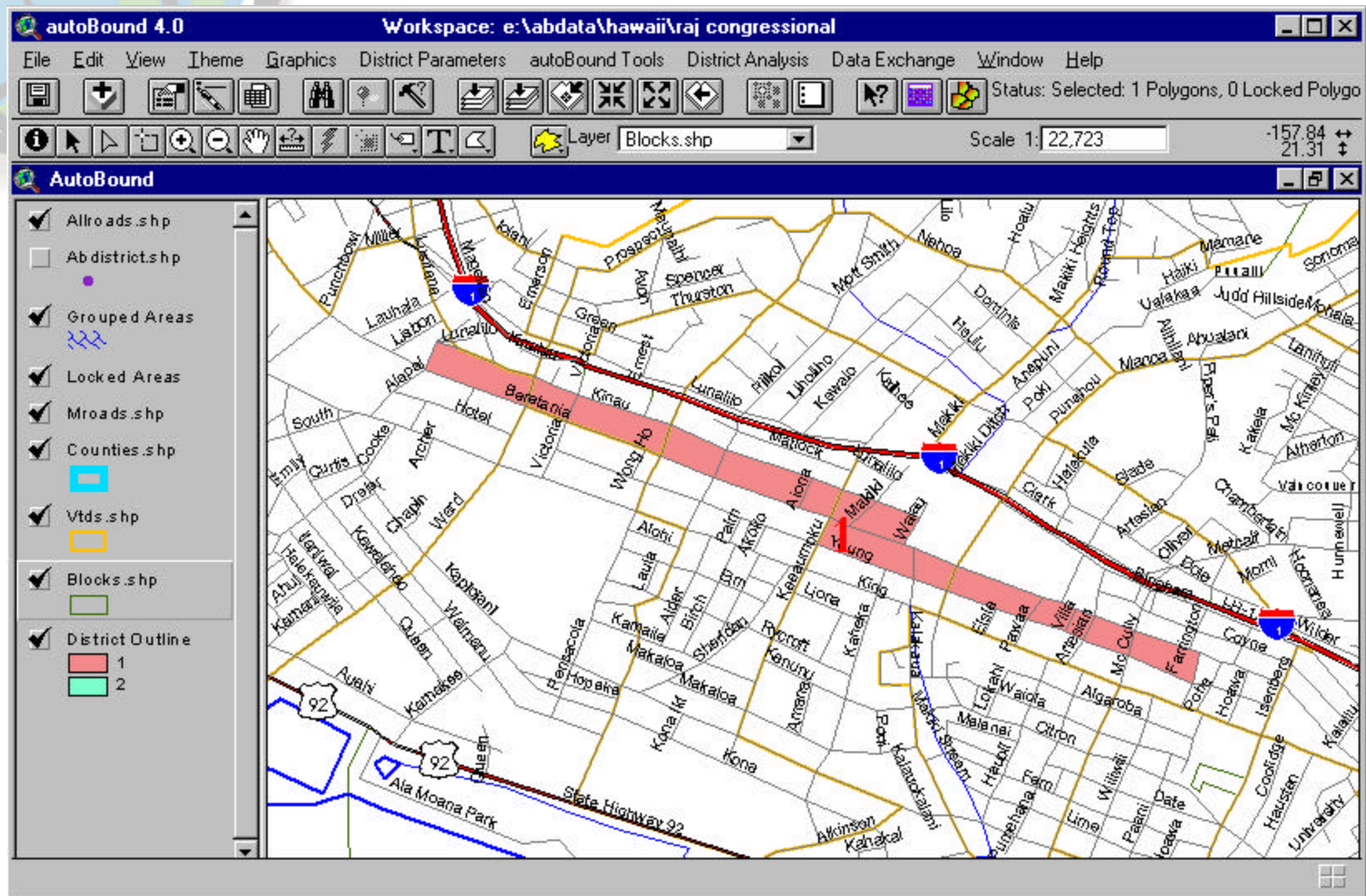
Geometrically compact? 1,2: yes 3,4,5: no

R2001: Redistricting Guidelines



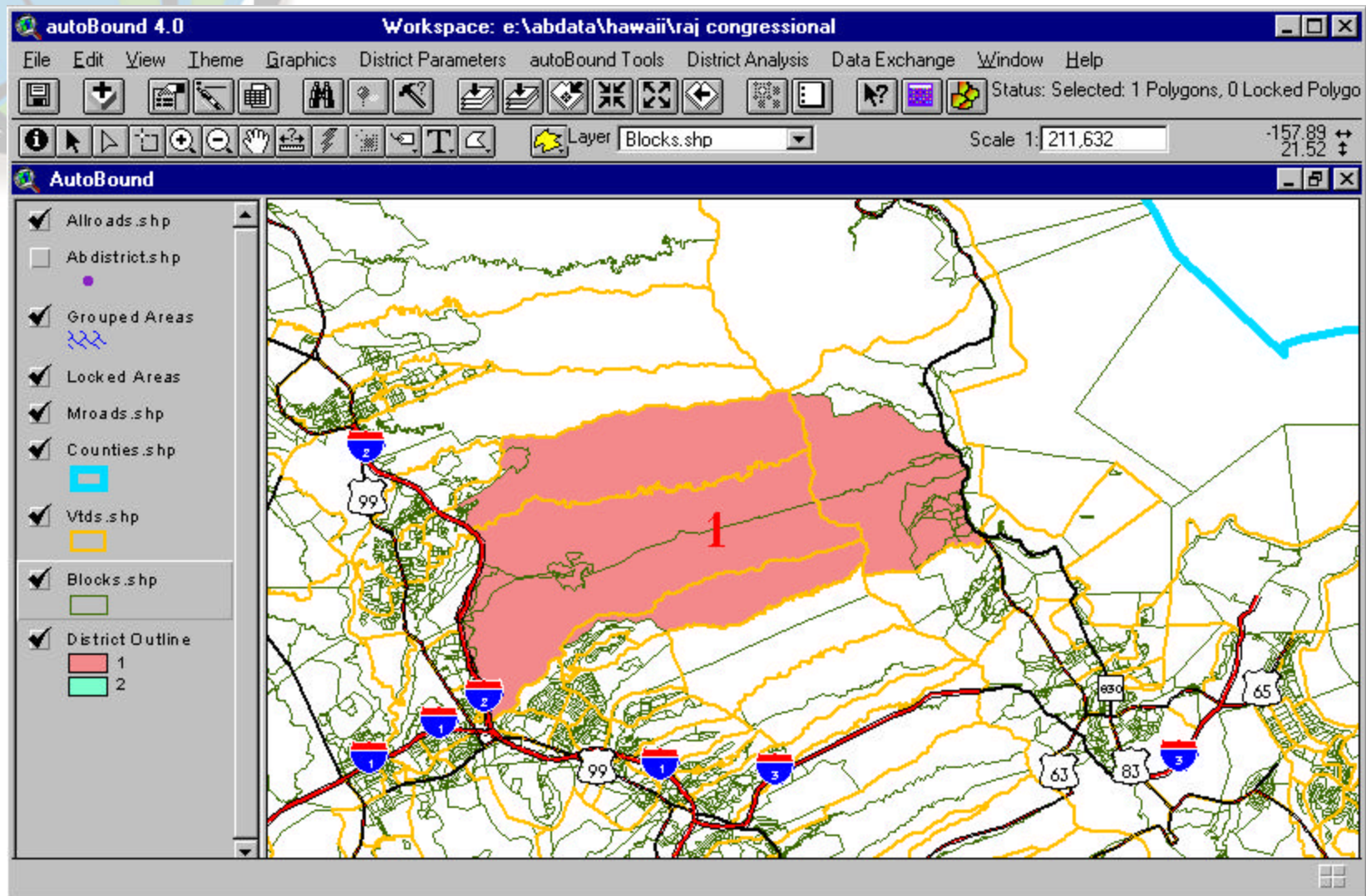
Geometrically compact? - yes Functionally compact? - yes

R2001: Redistricting Guidelines



Geometrically compact? - no Functionally compact? - no

R2001: Redistricting Guidelines



Geometrically compact? - yes Functionally compact? - no



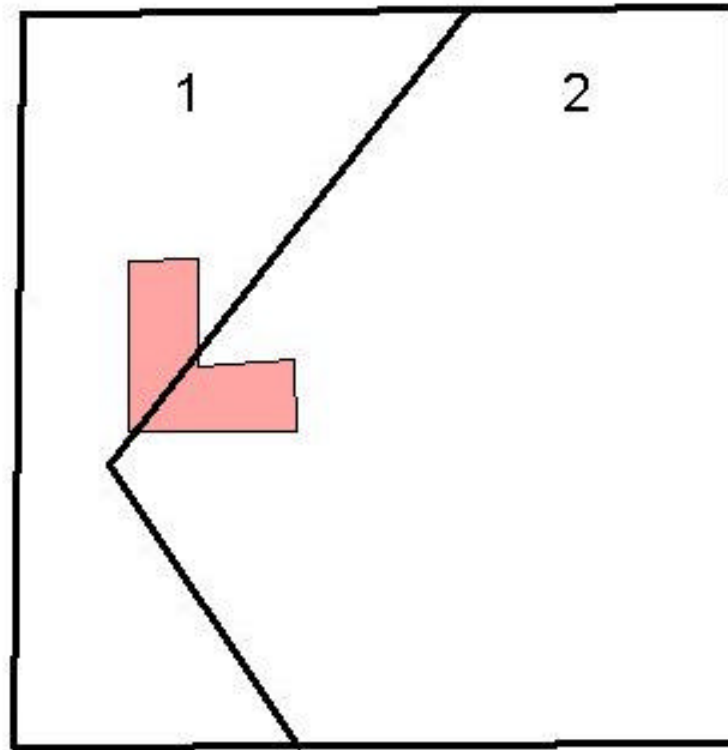
R2001: Redistricting Guidelines

- **Submergence**

- When a district is drawn so that a distinct minority group's (e.g. racial minority's) voting power is submerged in a larger district so that their opportunity for electing a candidate of their choice is greatly reduced, if not eliminated.

R2001: Redistricting Guidelines

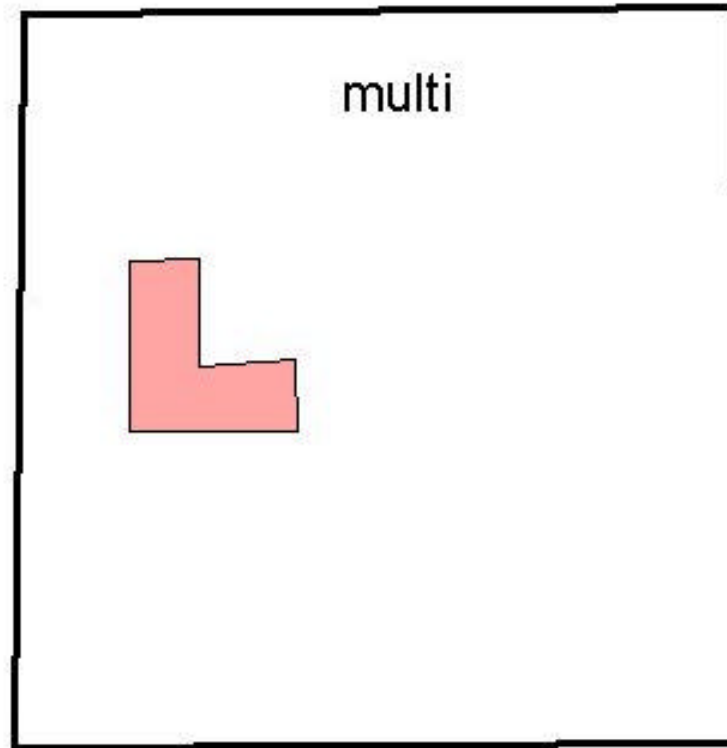
- Submergence by dividing into two or more districts





R2001: Redistricting Guidelines

- Submergence within a larger district





R2001: Topics

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R2001: Federal Population Base

**Now let's look at the
Federal Population Base
used for Congressional
redistricting in Hawaii...**



R2001: Federal Population Base

2000 PL94-171 Data from the U.S.
Census Bureau

2000 PL Data	Fed base
Total Population	1,211,537

Four Tables:

PL1 – Total population by 63 race categories

PL2 – Total Hispanic or Latino and not Hispanic...

PL3 – Population 18 years and over by 63 race categories

PL4 – Population 18 years and over by Hispanic...



R2001: Federal Population Base

Federal Population Base

1,211,537 people

**So for the two Congressional Districts,
the target population is 605,769
people per district.**

**The current districts, drawn in 1991,
have populations of:**

District 1: 568,524

District 2: 643,013

This is why we have to redistrict.



R2001: Federal Population Base

2 Congressional Districts

Maximum Deviation 0.82%*

2000 PL Data	Fed base	Deviation
Total Population	1,211,537	
Target Population	605,769	0%
1991 District 1	568,524	-6%
1991 District 2	643,013	+6%

* Maximum deviation upheld by a Federal court

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grey grid of latitude and longitude lines. It is positioned in the top-left corner of the slide.

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R2001: Redistricting Example

**This example has been
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purposes only.**

**This is not the plan being
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Reapportionment
Commission.**

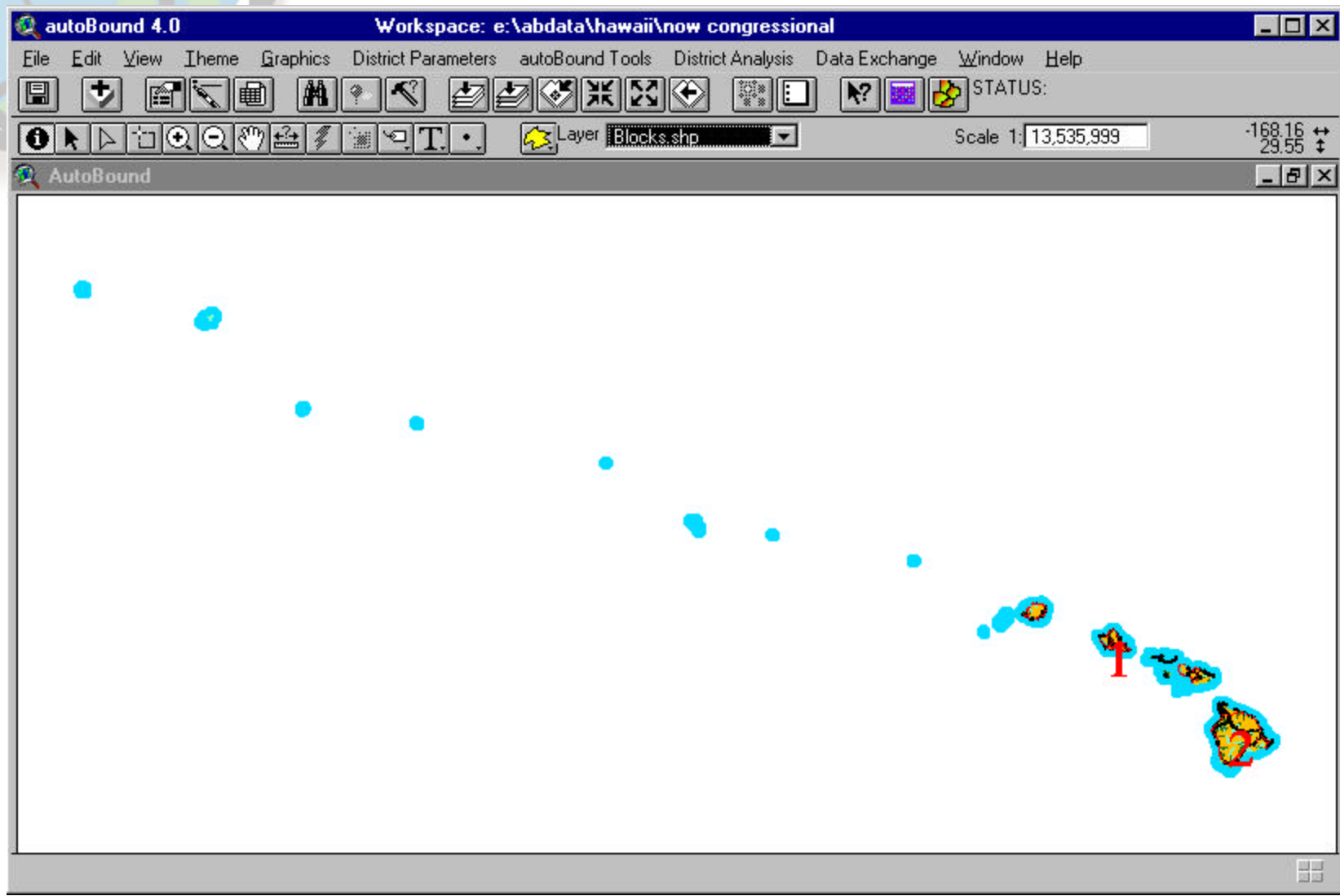


R2001: Redistricting Example

**This example uses ArcView
GIS software with the
autoBound extension.**

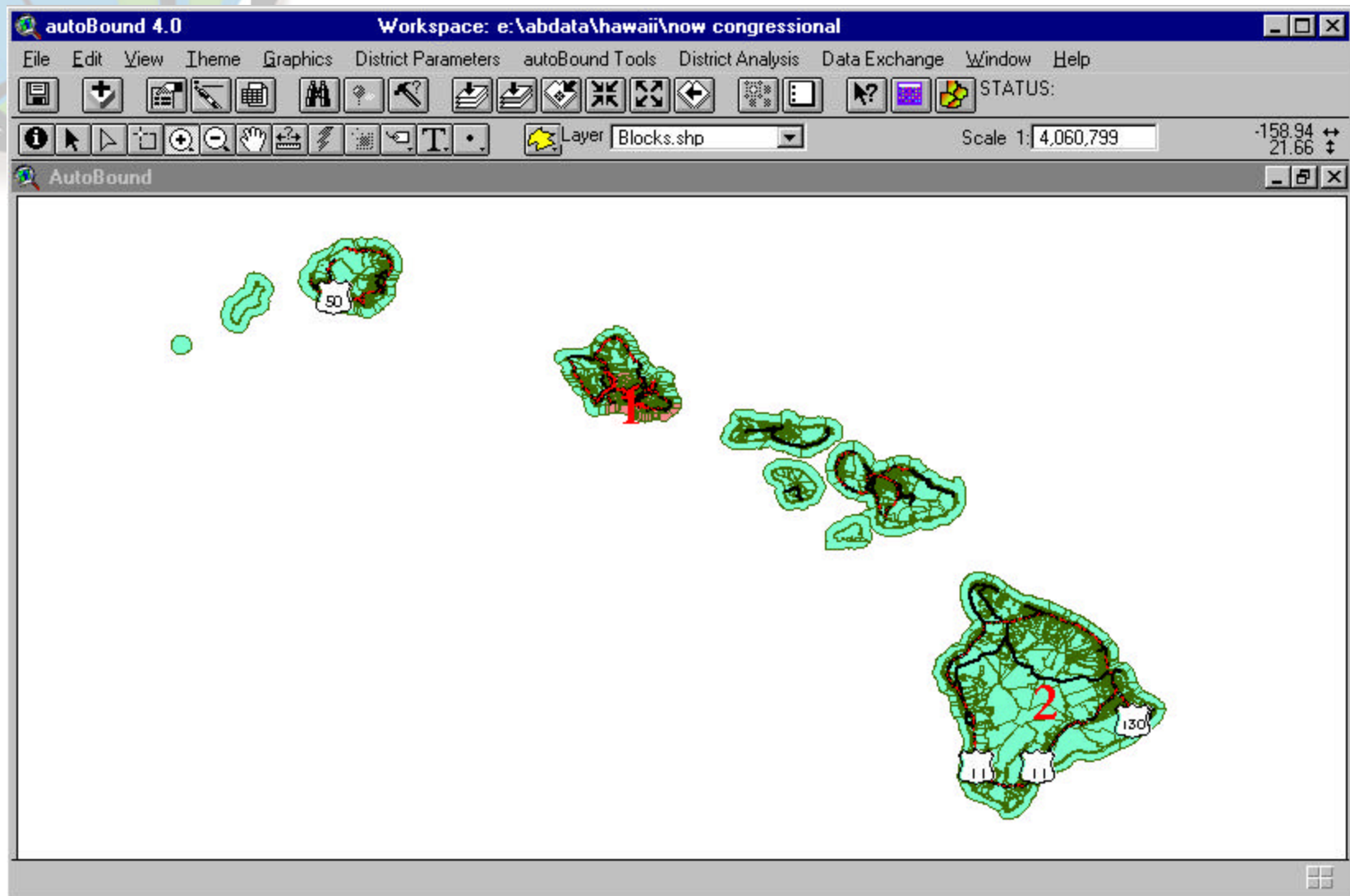
**Let's do some
redistricting...**

R2001: Redistricting Example



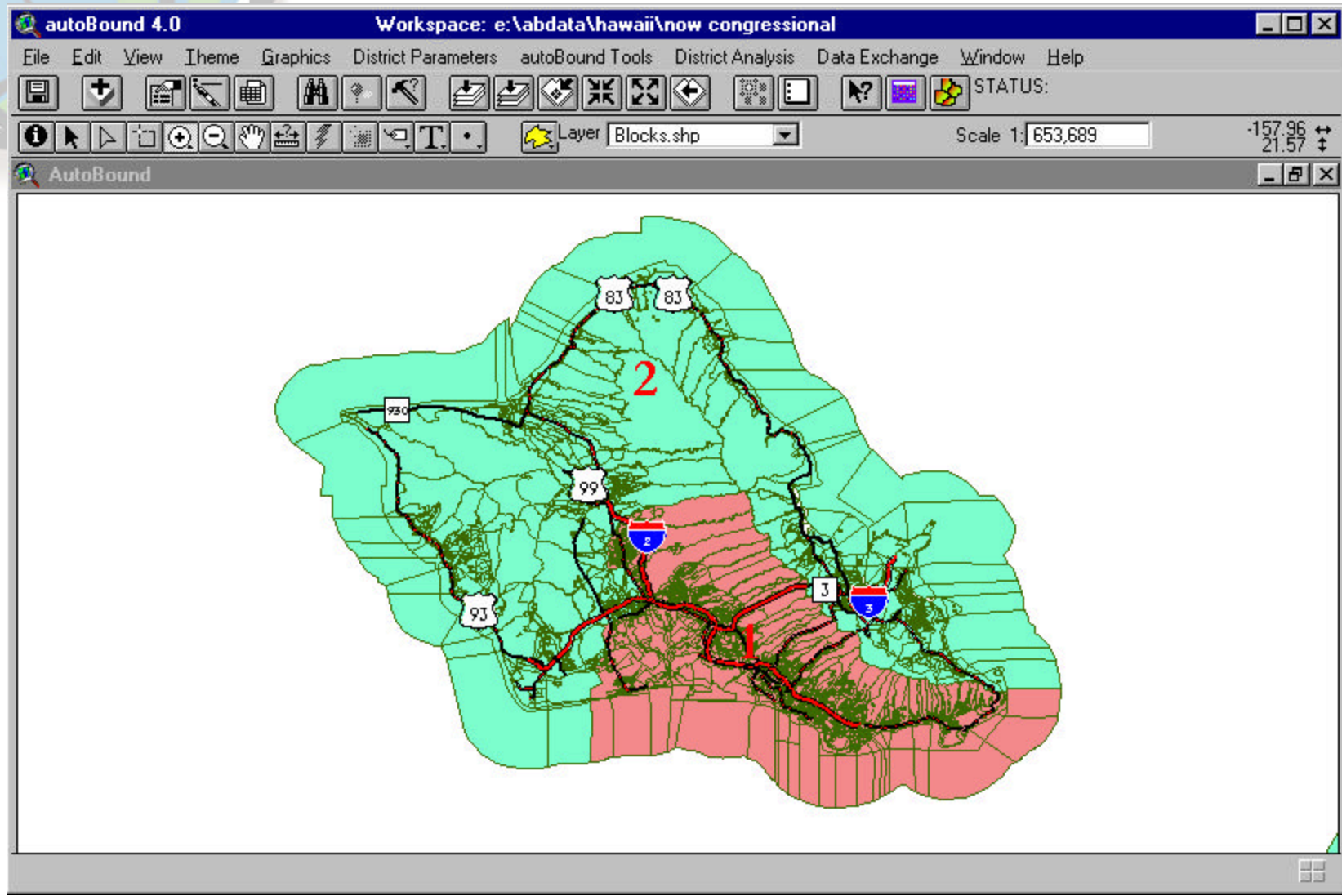
Full extent of 1991 Congressional Districts 1 and 2

R2001: Redistricting Example



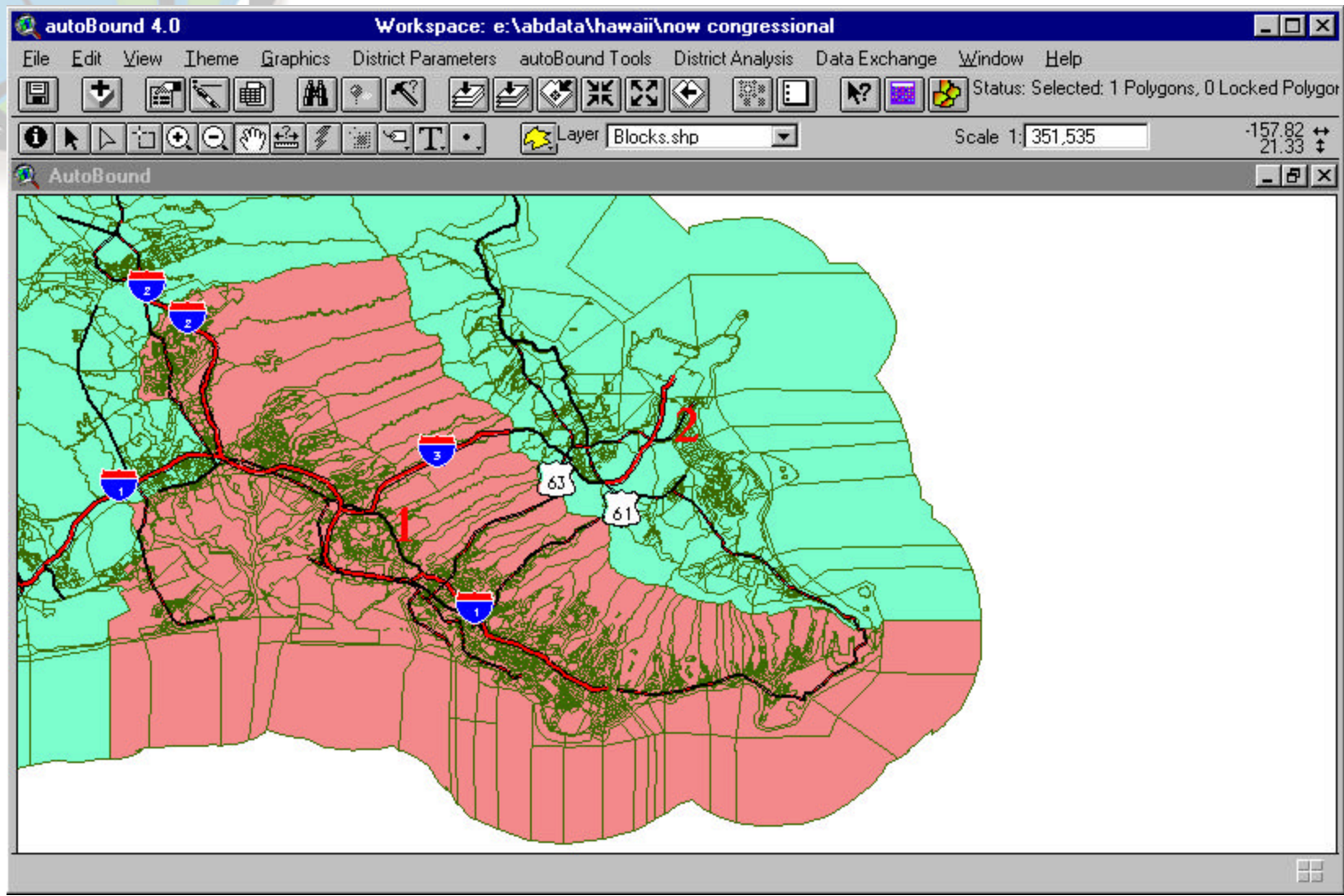
1991 Congressional Districts 1 and 2 for eight islands

R2001: Redistricting Example



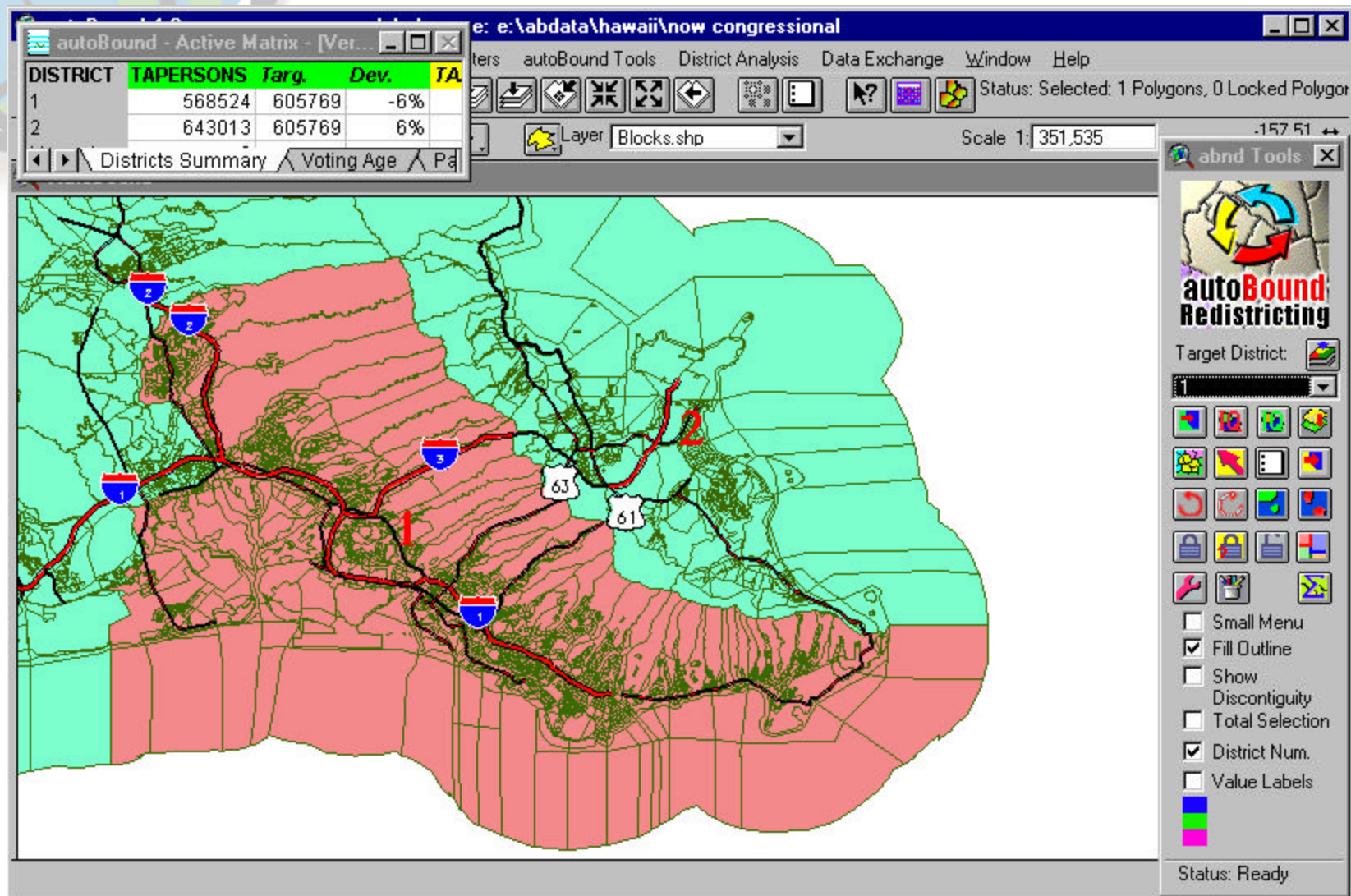
1991 Congressional Districts 1 and 2 for Oahu

R2001: Redistricting Example



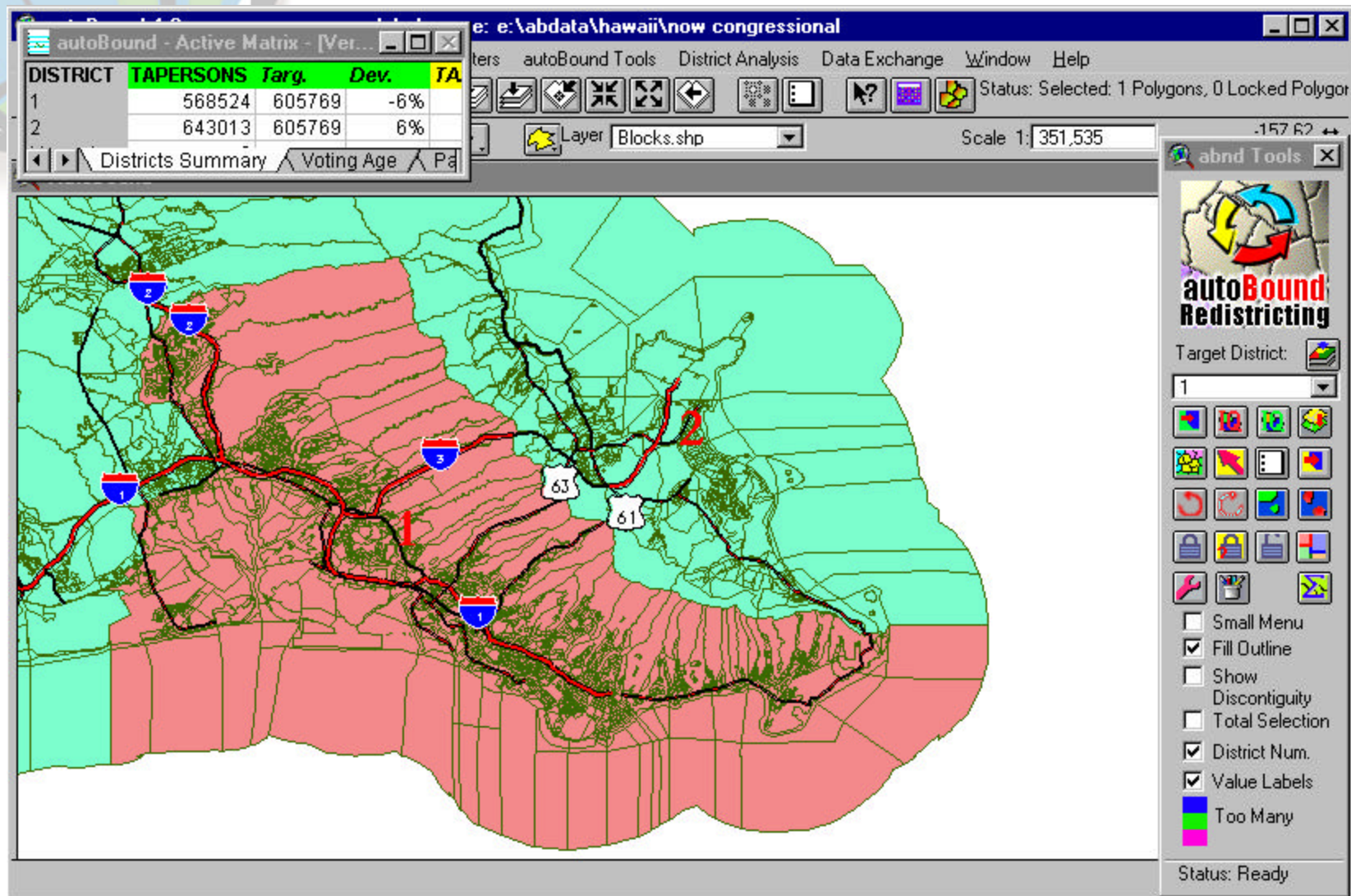
1991 Congressional District 1

R2001: Redistricting Example



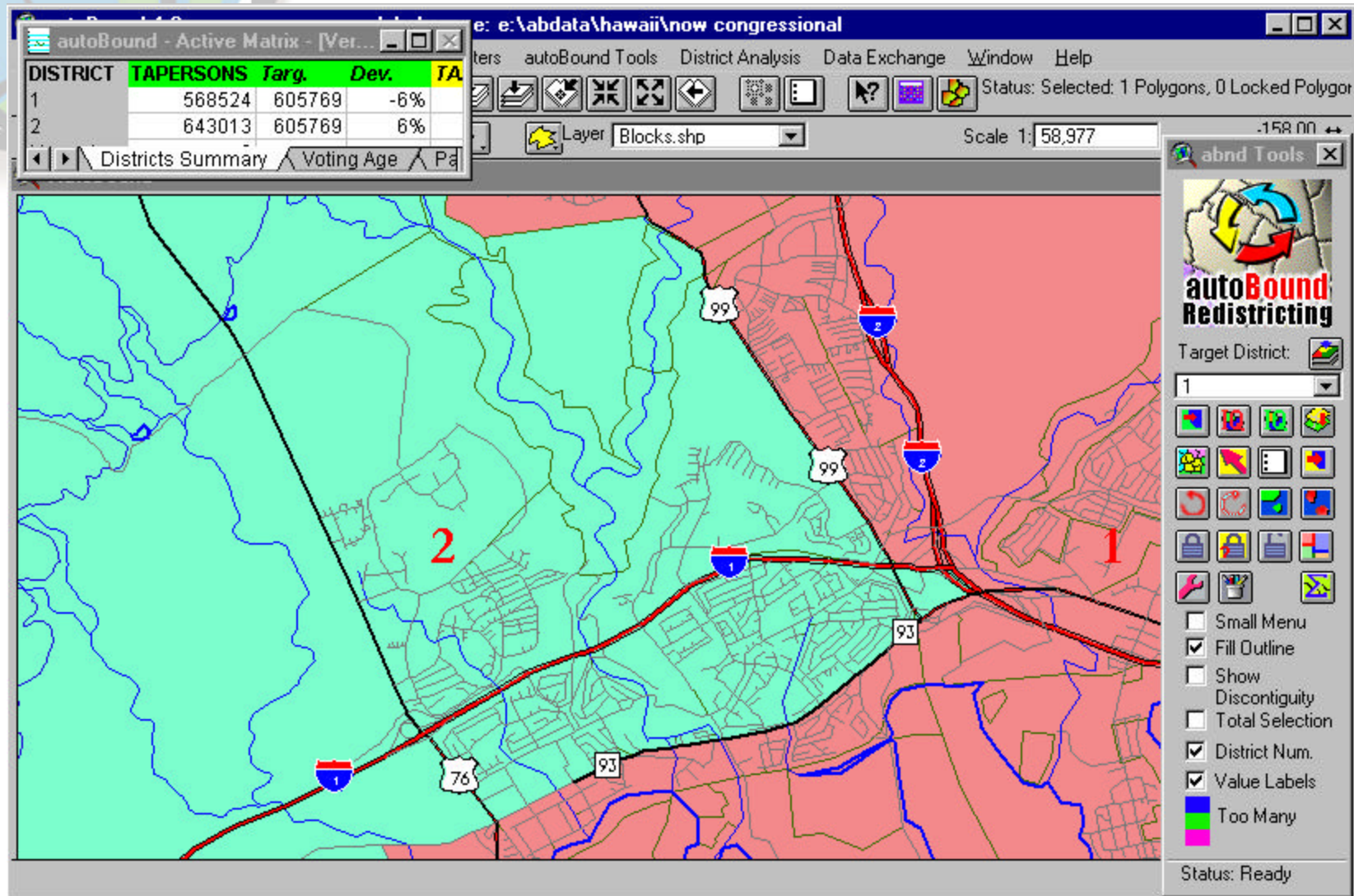
Active matrix shows 6% deviation before any redistricting

R2001: Redistricting Example



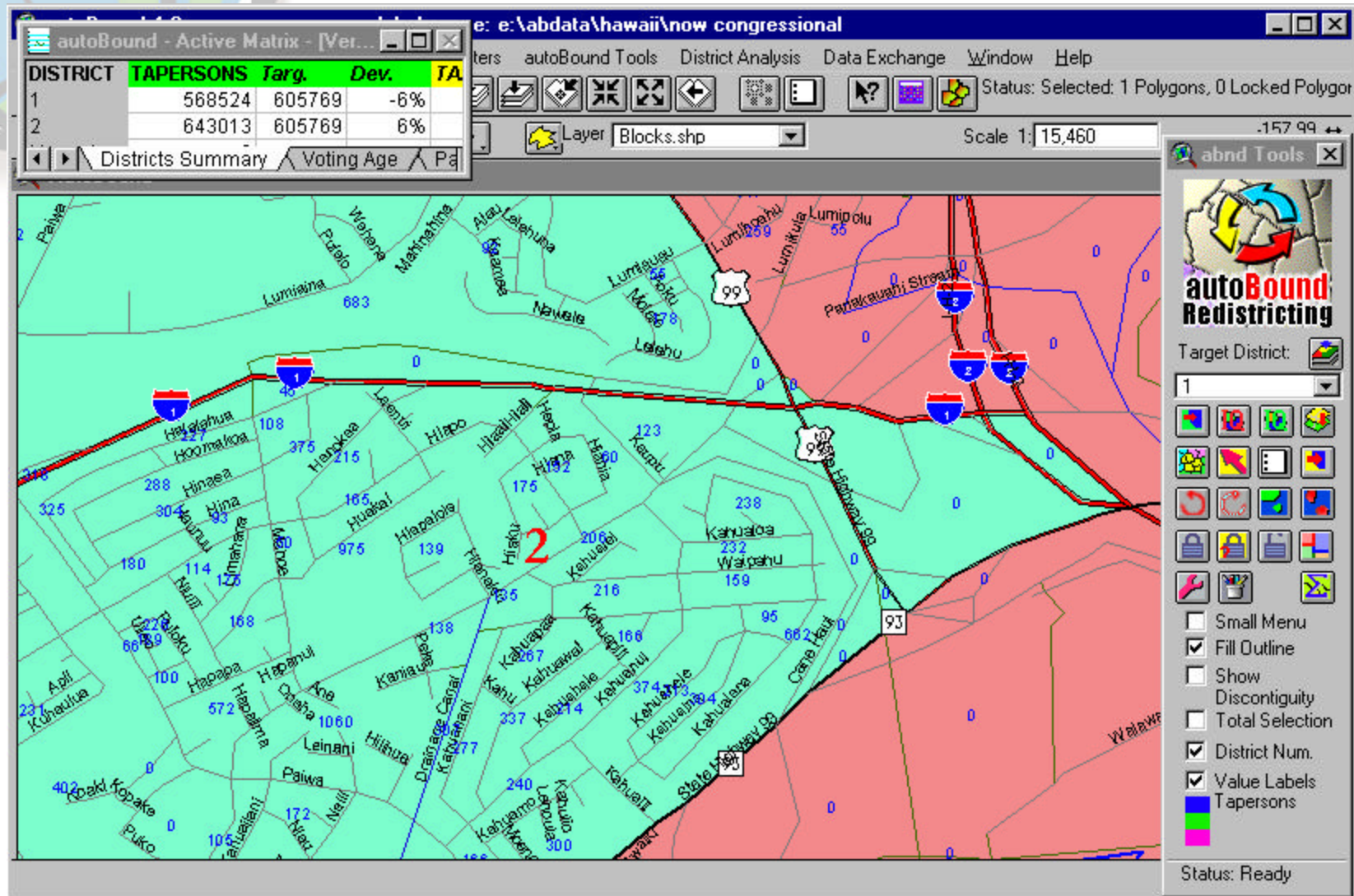
Need to add census blocks to District 1

R2001: Redistricting Example



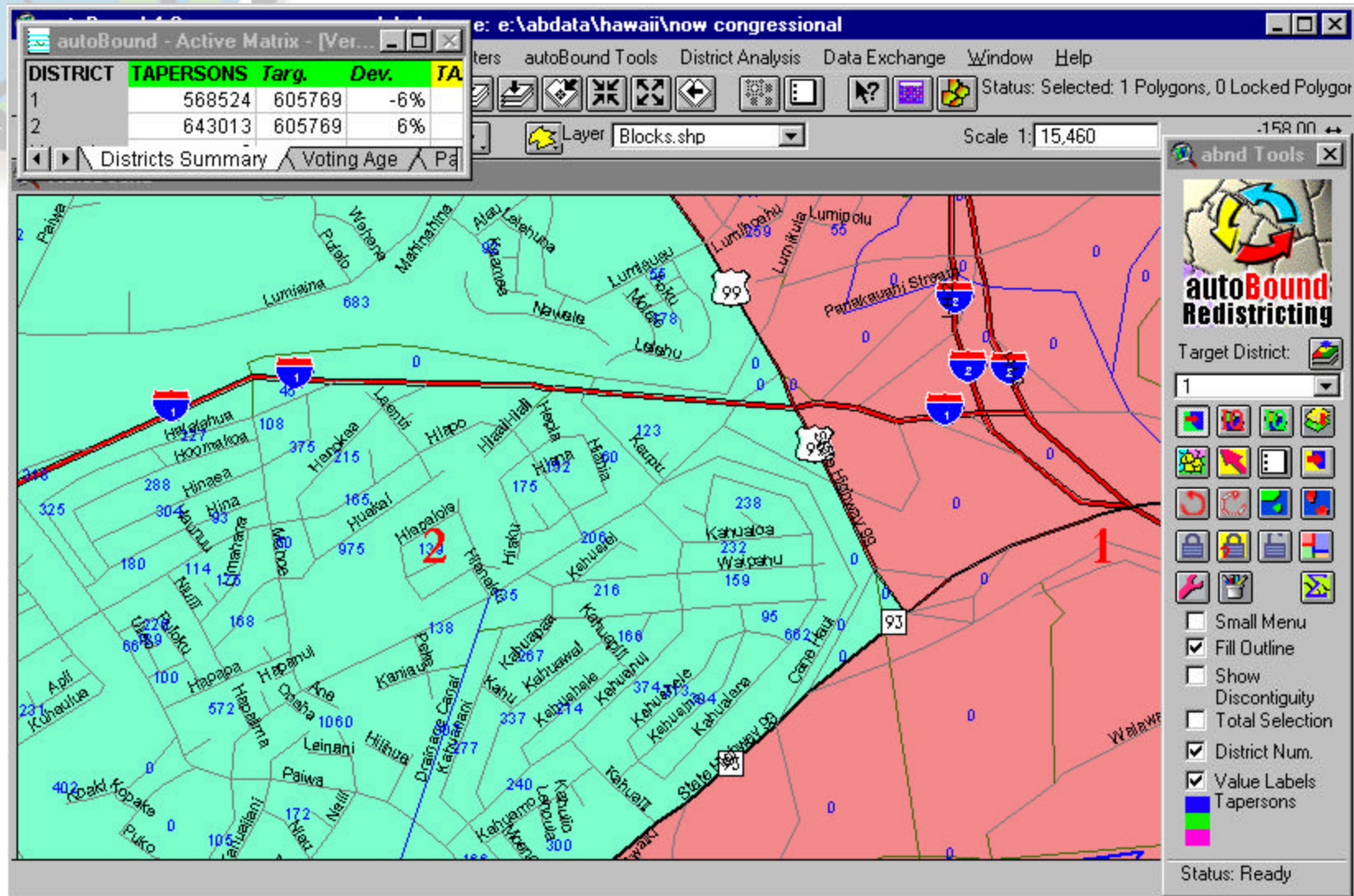
Add blocks in “the triangle”

R2001: Redistricting Example



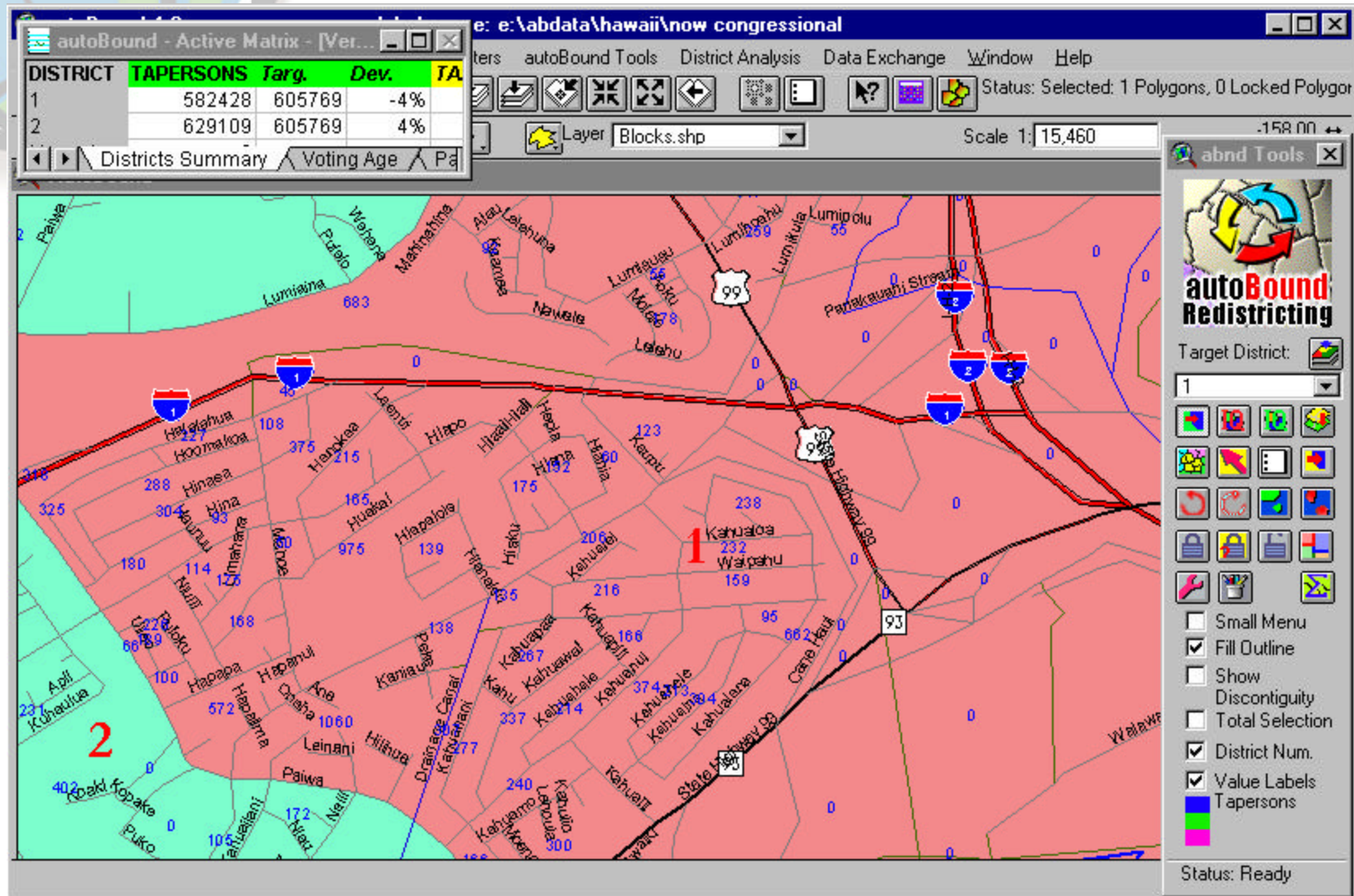
Census blocks with 2000 population in blue – note zeros

R2001: Redistricting Example



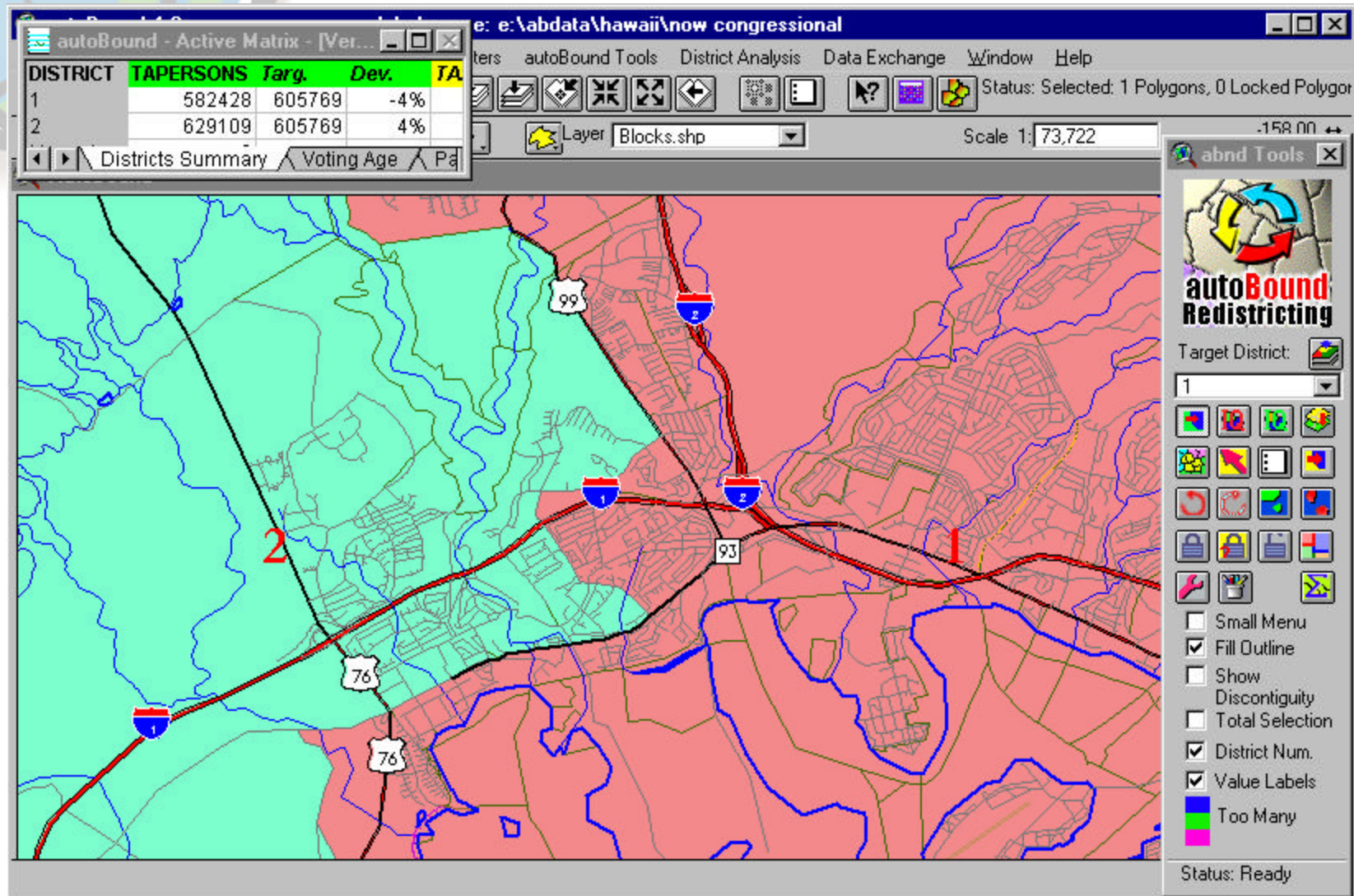
Can assign zero pop blocks for aesthetics and simplicity

R2001: Redistricting Example



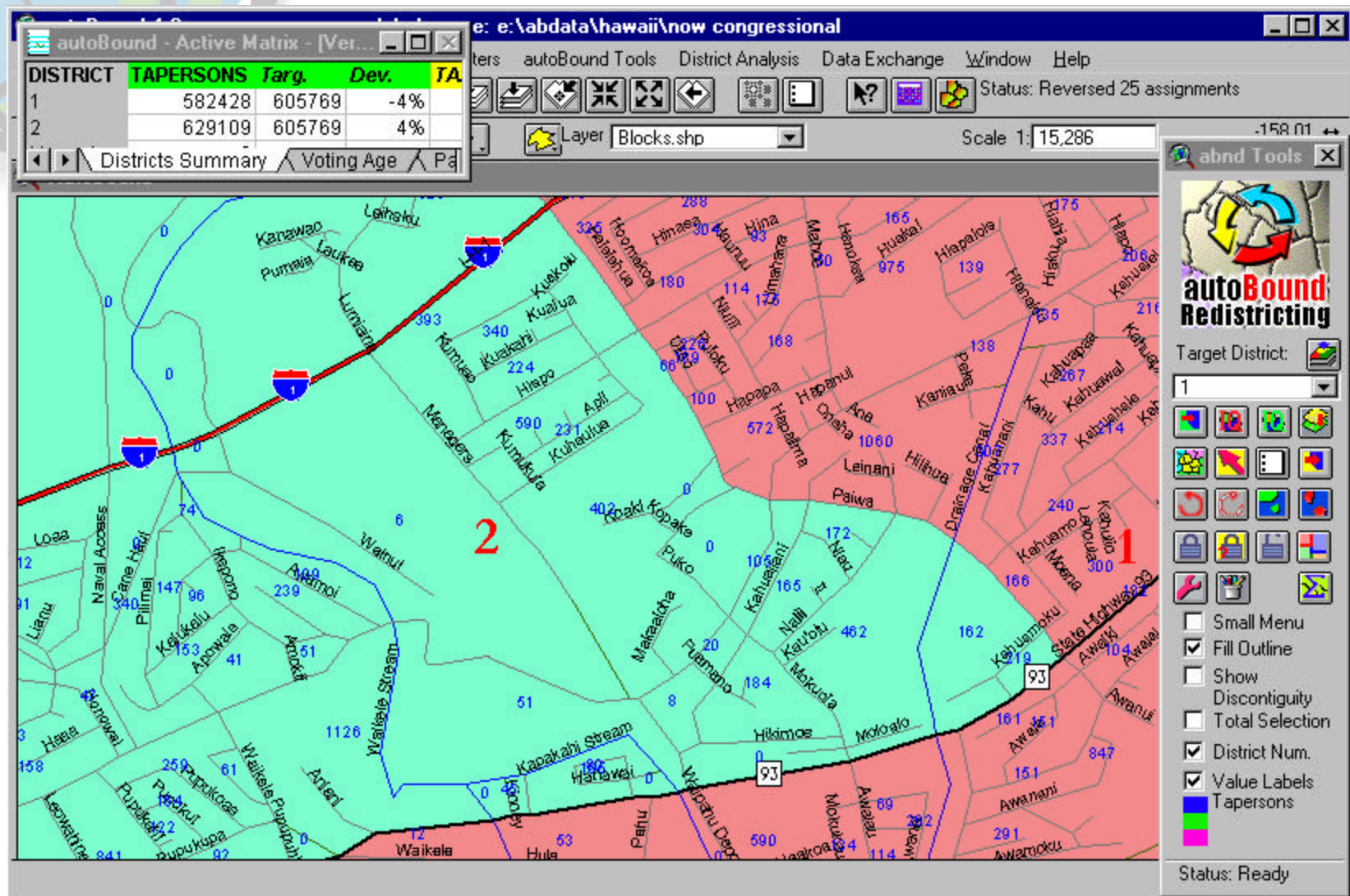
Active matrix shows deviation down to +/- 4%

R2001: Redistricting Example



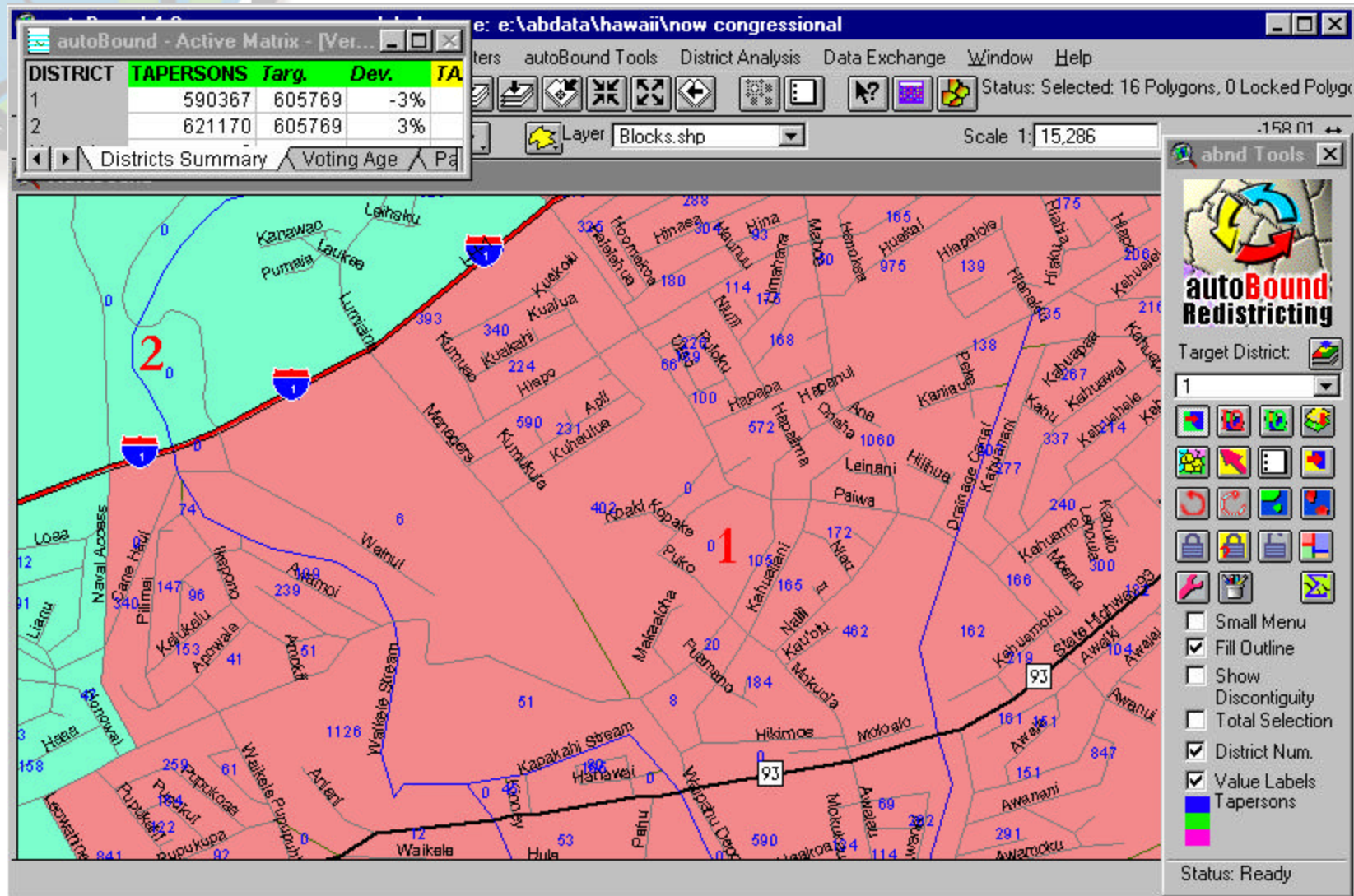
What if we assign the entire area makai of H-1 to District 1?

R2001: Redistricting Example



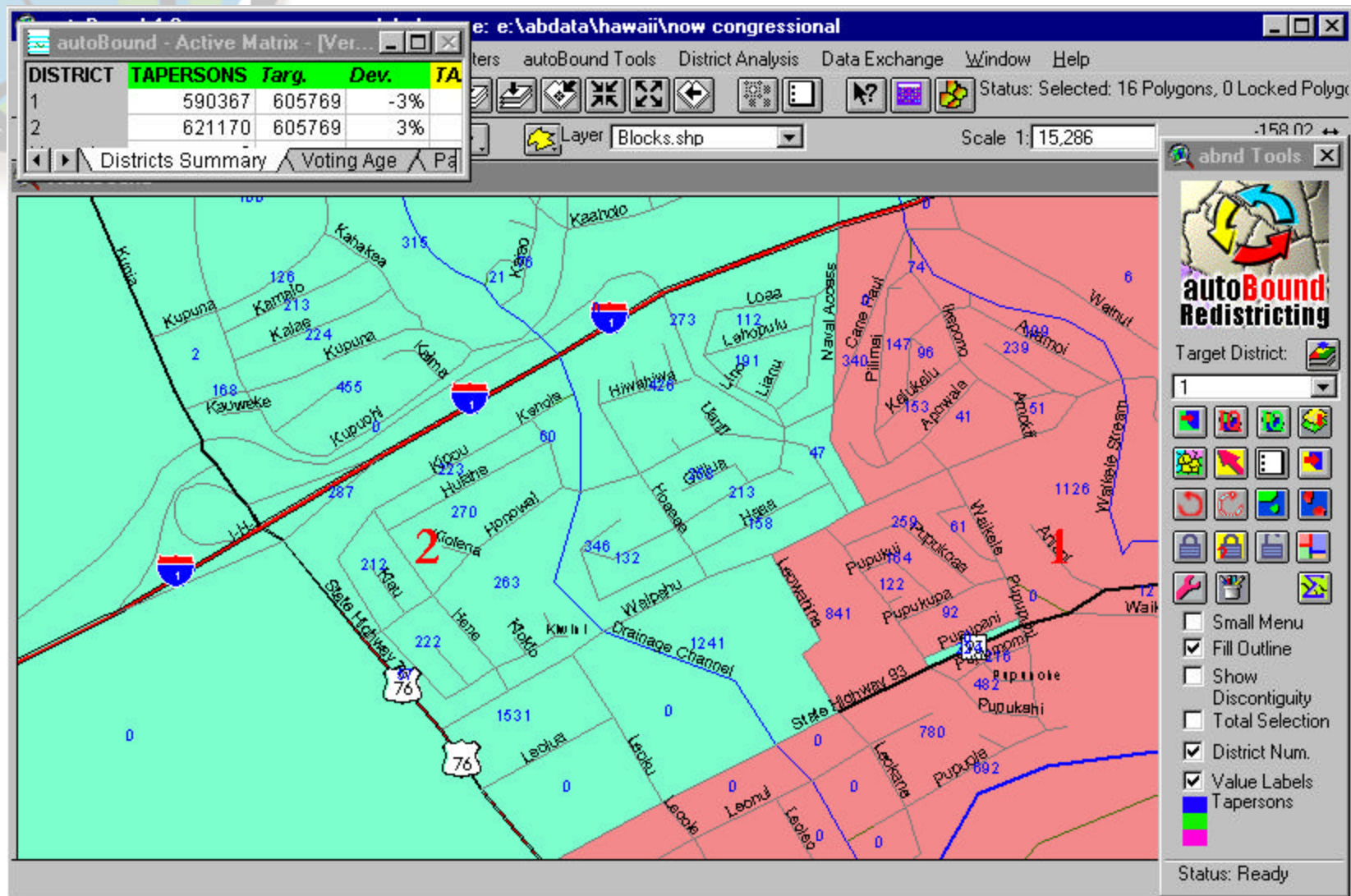
One census block has 1126 people, other large ones also...

R2001: Redistricting Example



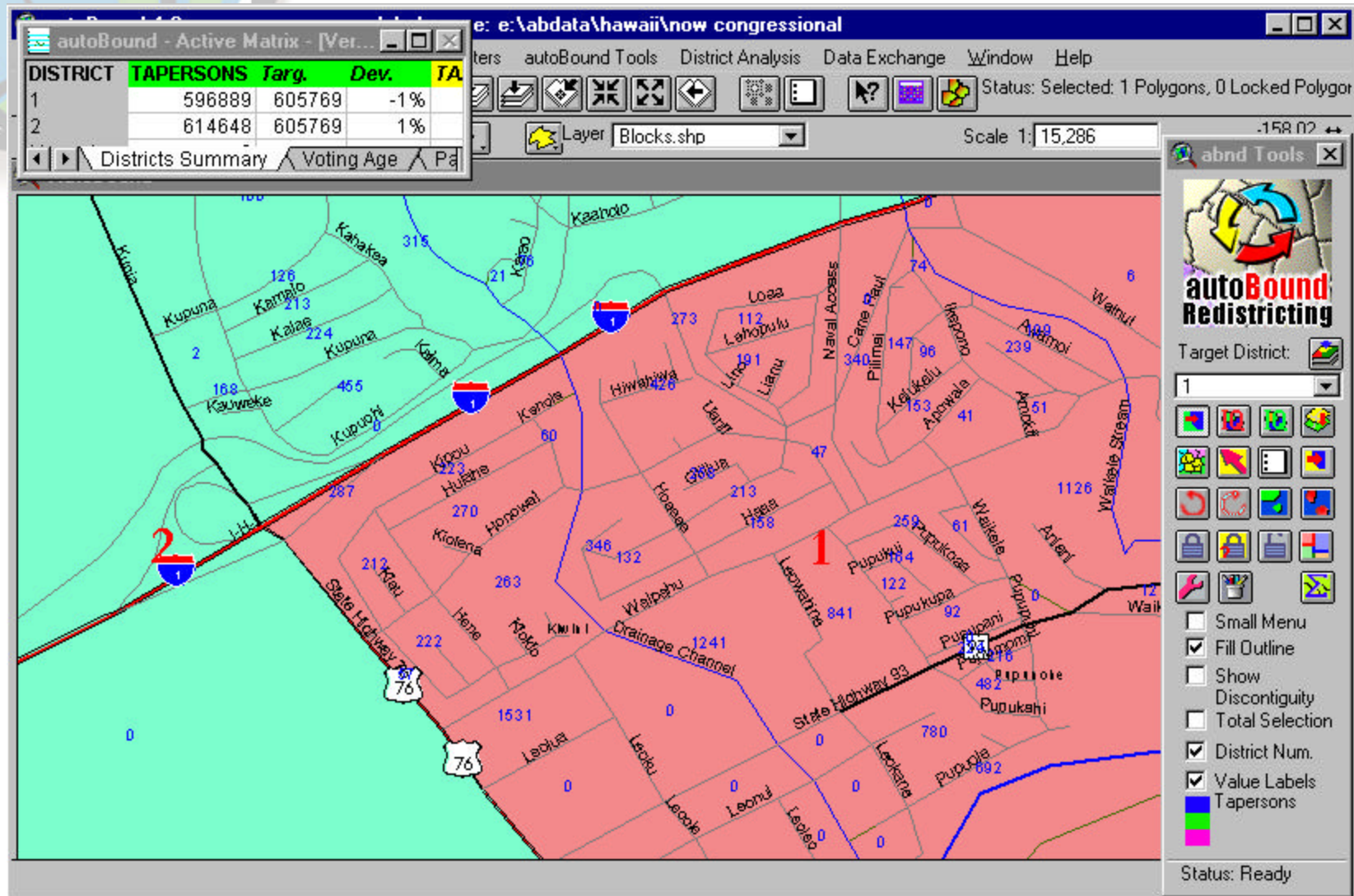
Deviation down to +/- 3%, pan to the left...

R2001: Redistricting Example

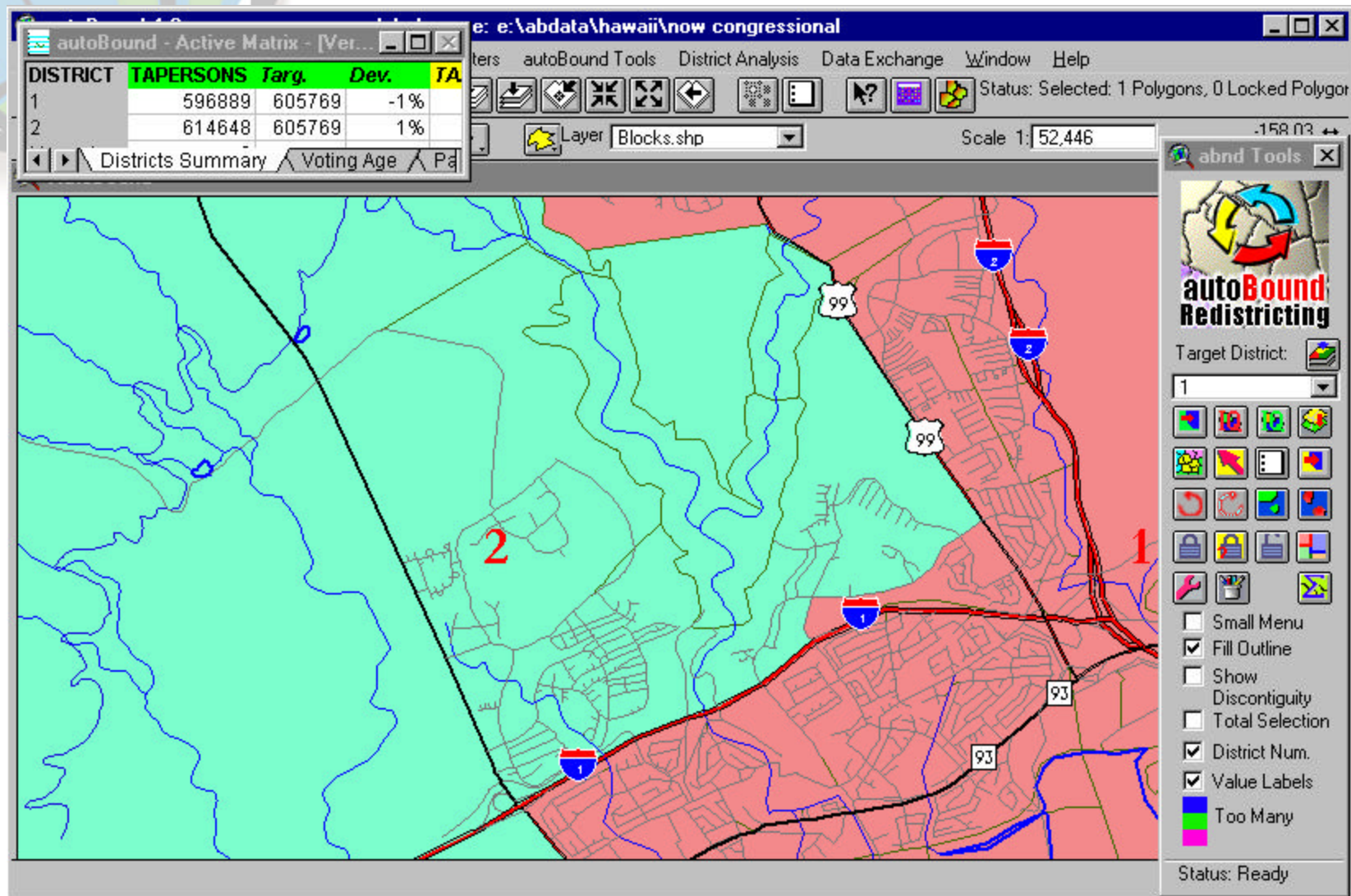


A block with 1531 people, another with 1241...

R2001: Redistricting Example

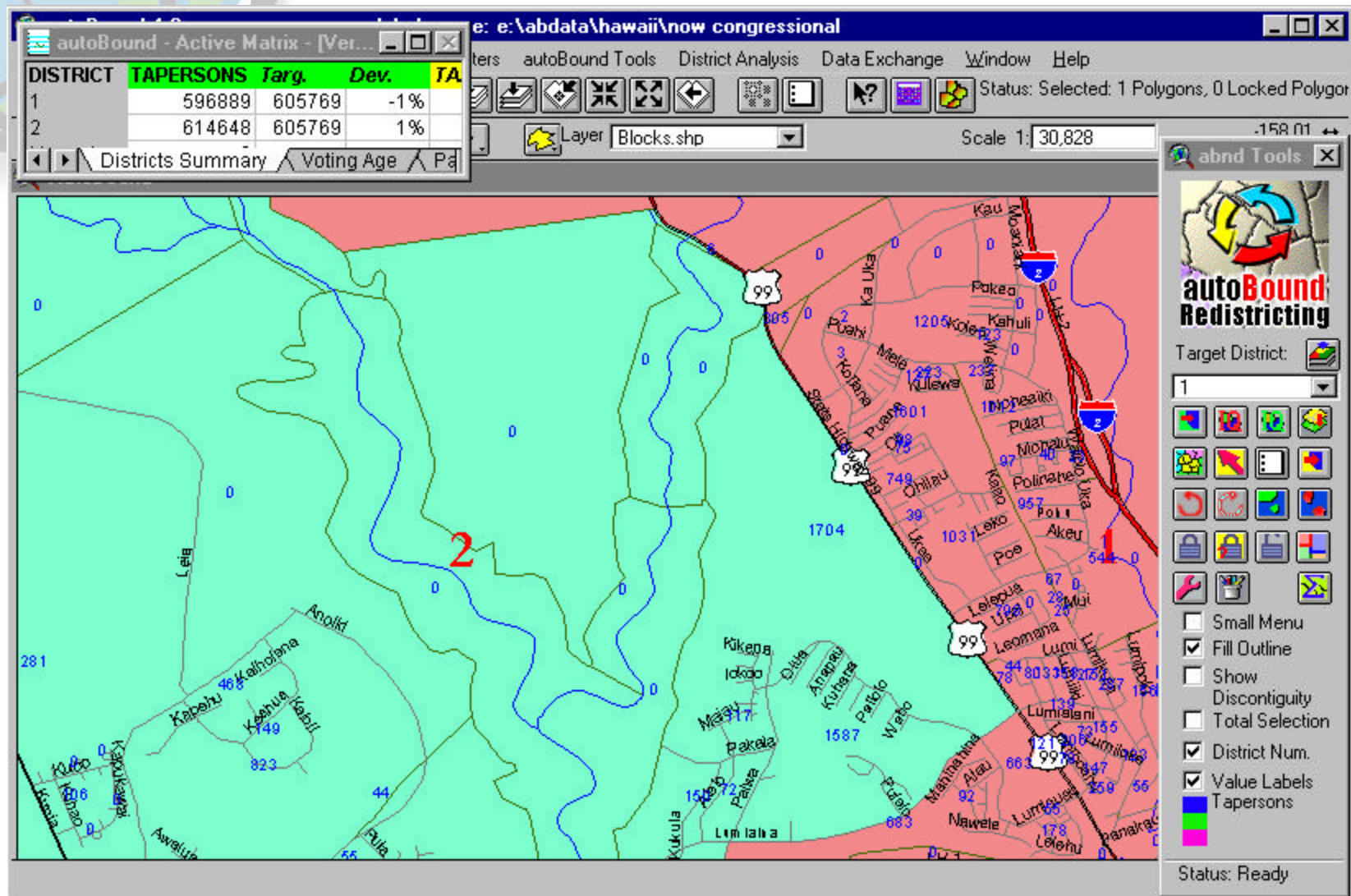


R2001: Redistricting Example



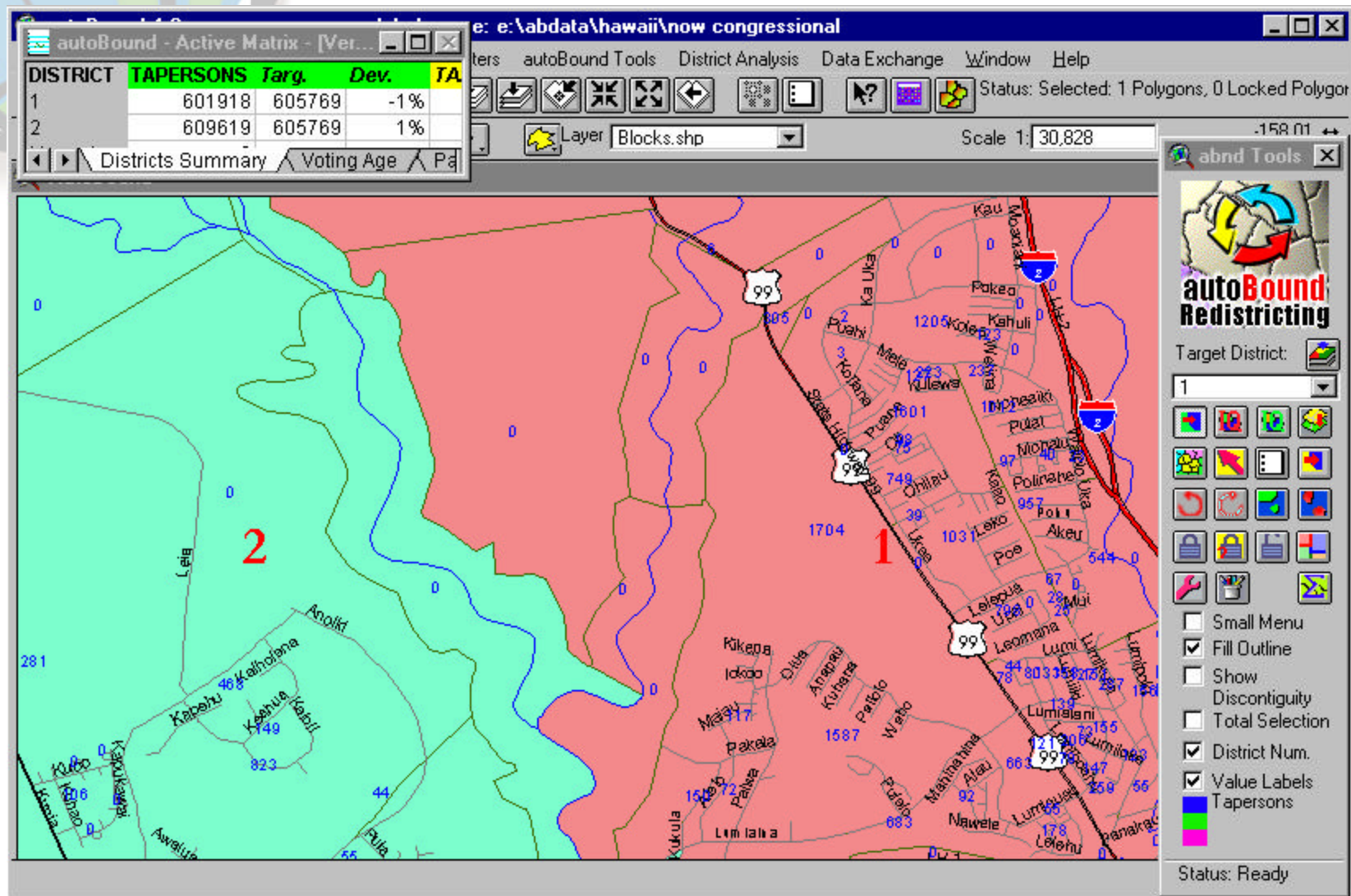
Deviation down to 1%, only 8,880 people difference...

R2001: Redistricting Example



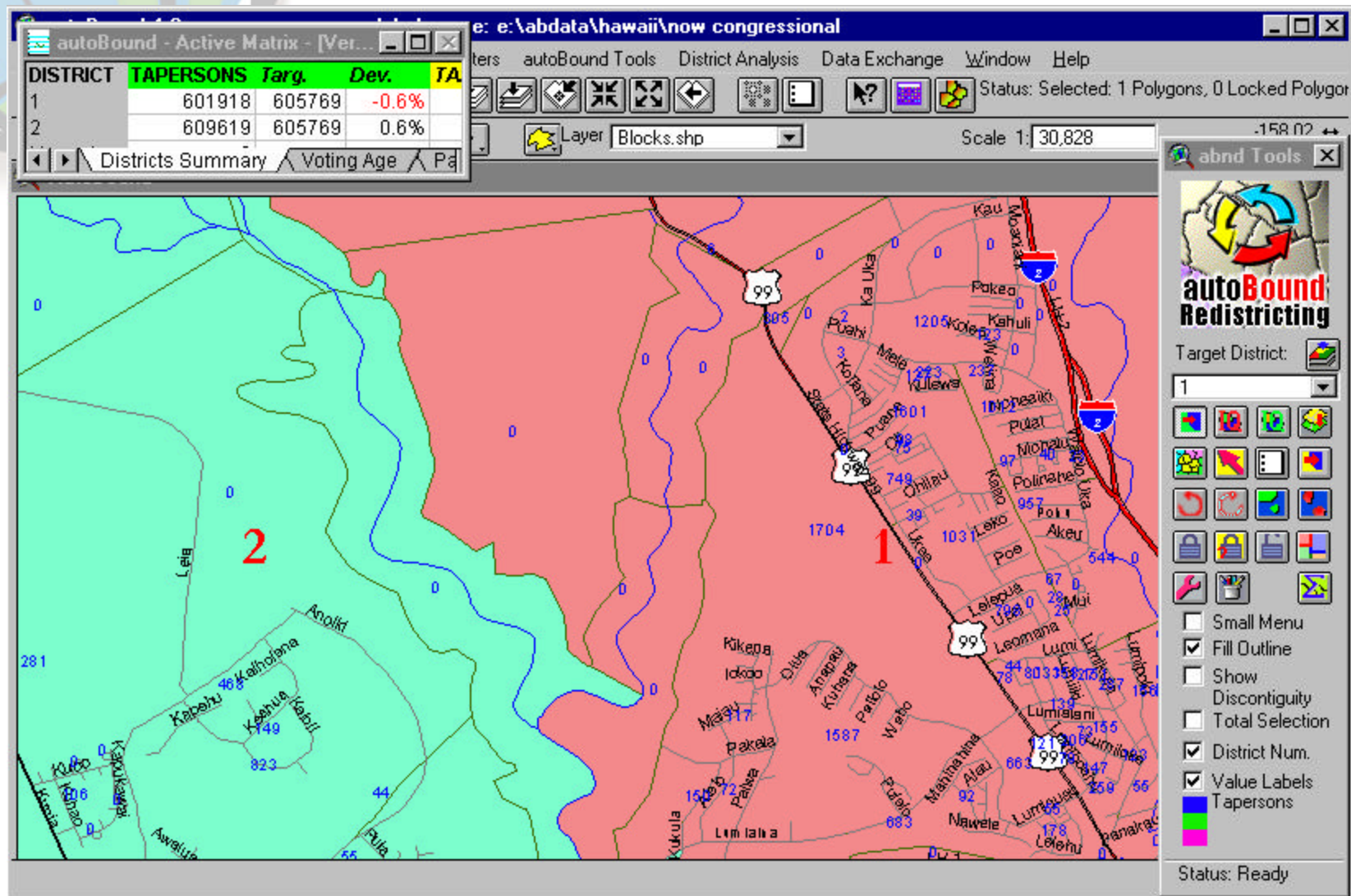
Several zero blocks, two big ones in this area...

R2001: Redistricting Example



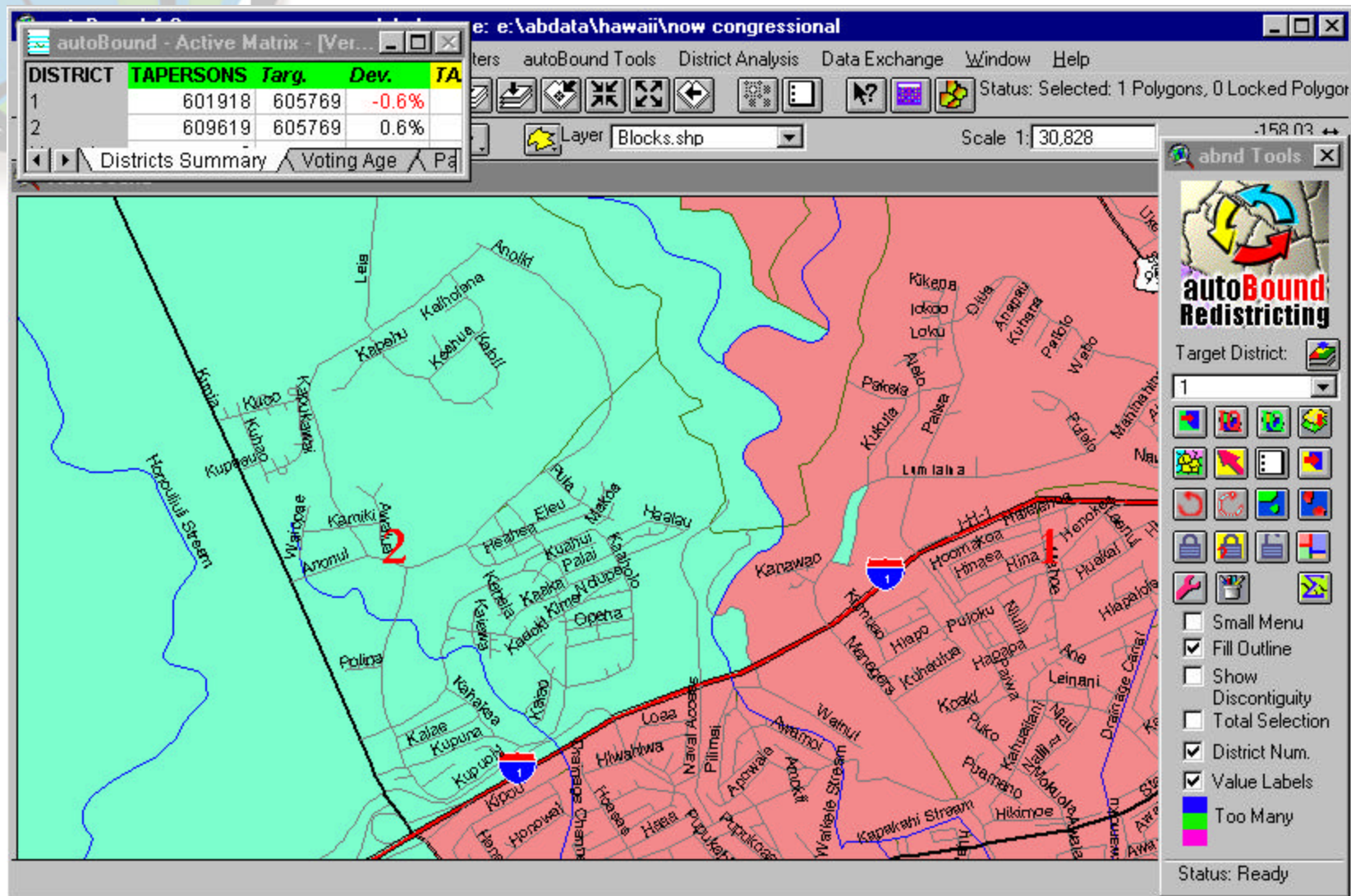
Still +/- 1%, but only 3,851 people to assign...

R2001: Redistricting Example



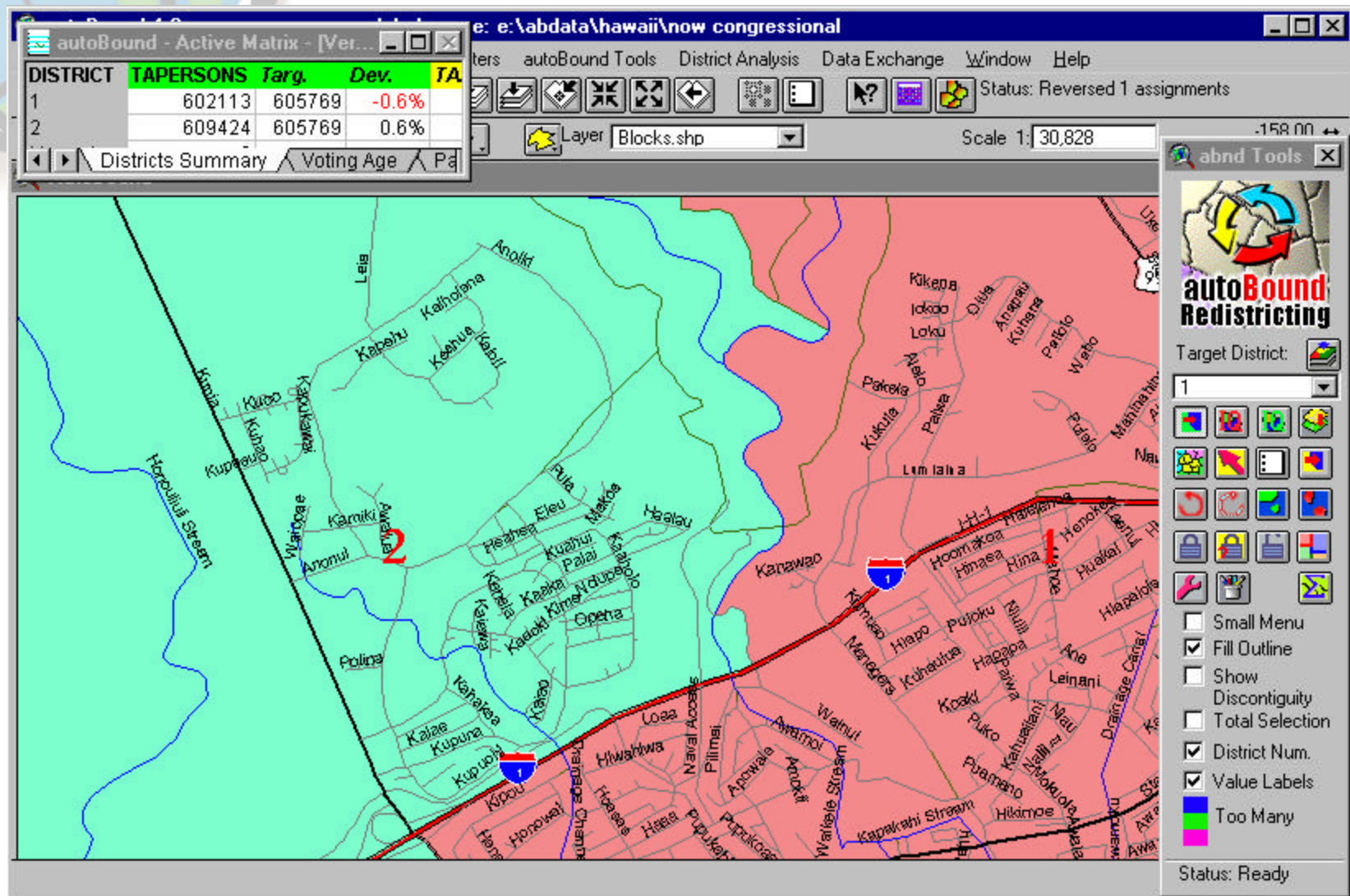
Actual deviation now +/- 0.6%... pan down and left...

R2001: Redistricting Example



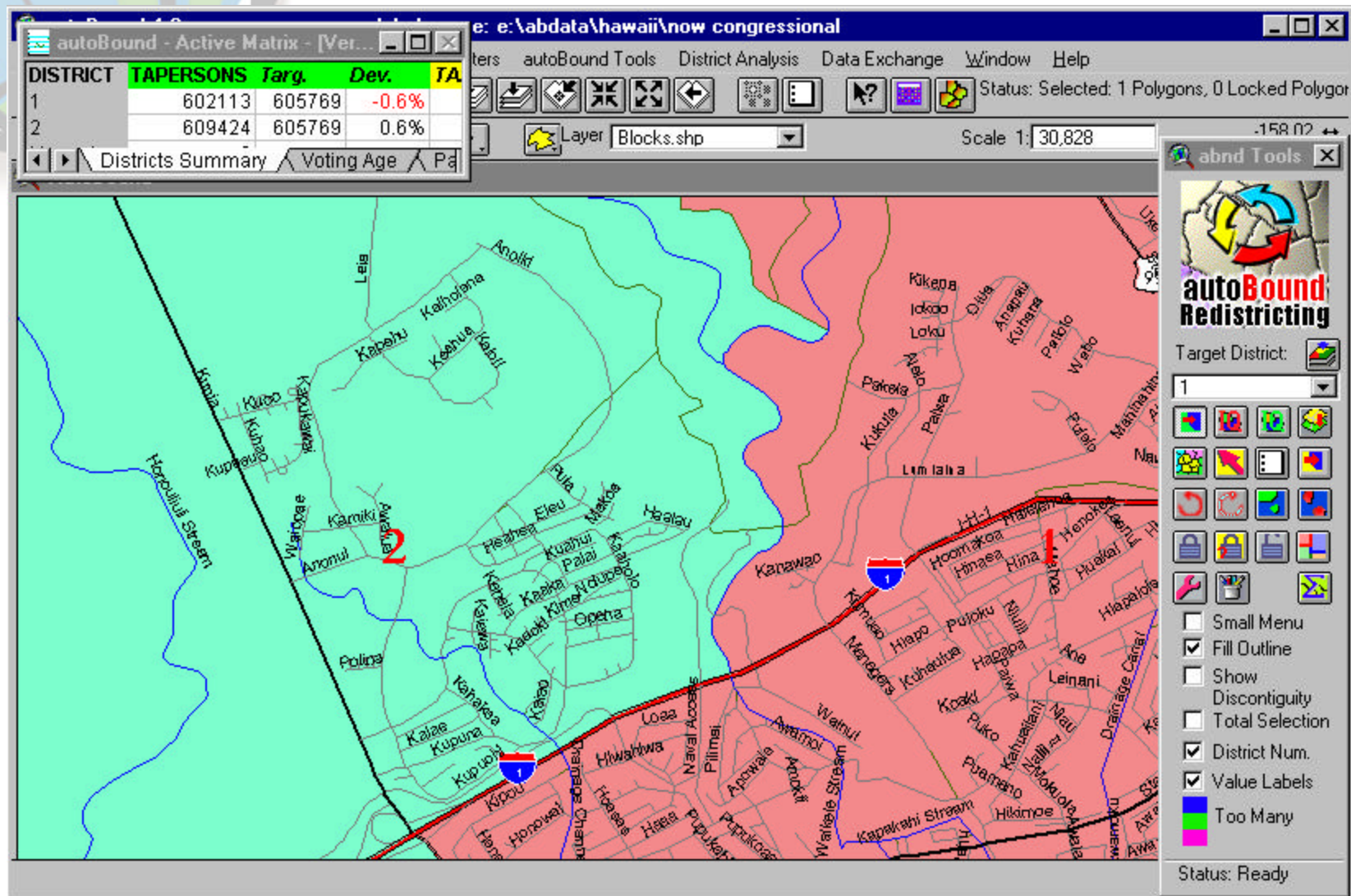
No “orphans” or discontinuous blocks...

R2001: Redistricting Example

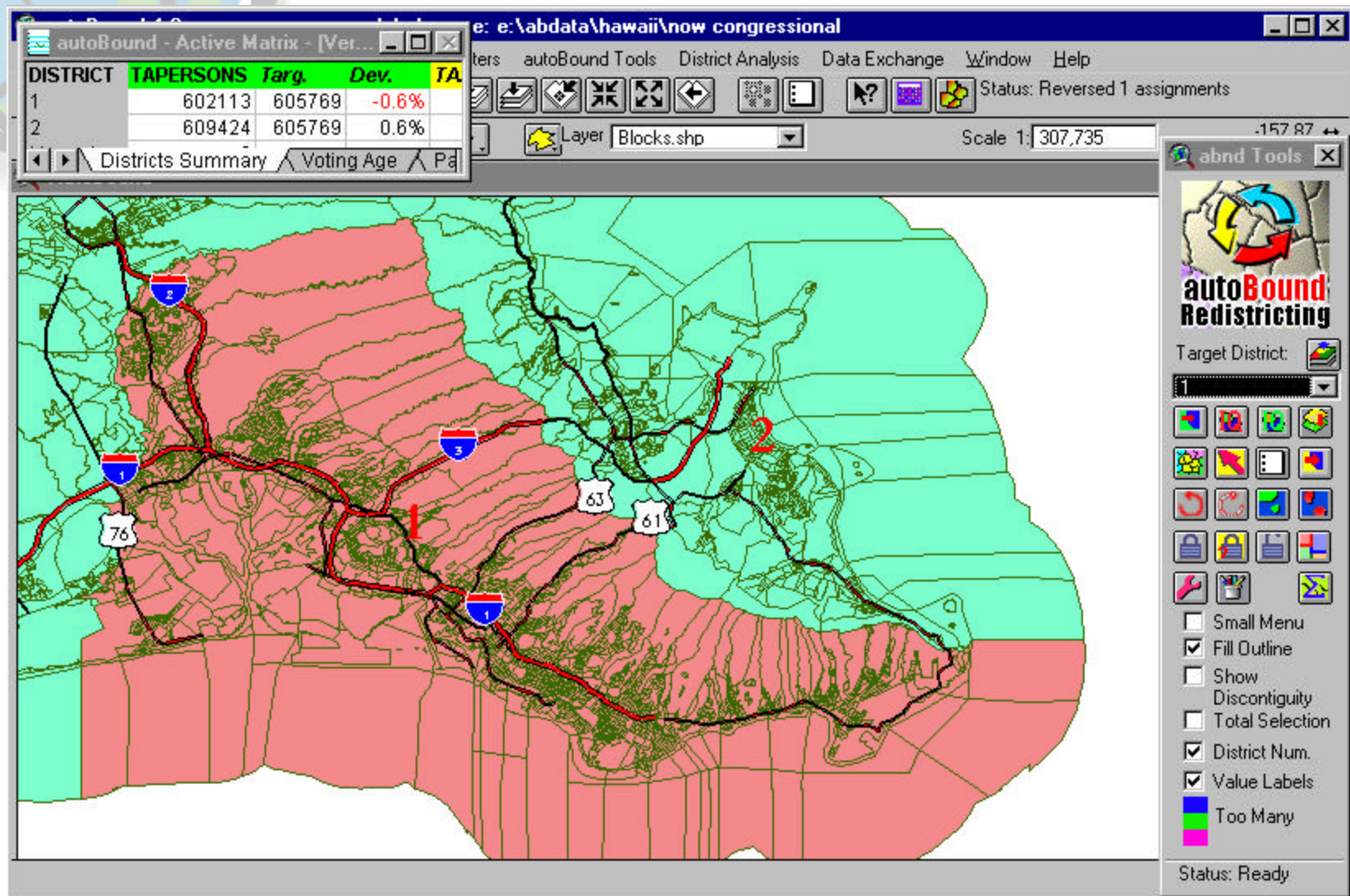


Follow identifiable features...

R2001: Redistricting Example



R2001: Redistricting Example



Here is the final boundary.



R2001: Redistricting Example

**Again, this example has
been created for
explanatory purposes only.**

**This is not the plan being
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Reapportionment
Commission.**



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R2001: State Population Base

- The Hawaii Constitution calls for reapportionment of the State legislative districts to be based on permanent residents.
- Non-residents are to be excluded from the Federal base to determine the State base.

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grey grid of latitude and longitude lines. It is positioned in the top-left corner of the slide.

R2001: State Population Base

The Hawaii Reapportionment Commission has voted to exclude the following non-residents from the Federal Base to create the Hawaii State Population Base.

- Non-resident Students
- Non-resident Military



R2001: State Population Base

Federal Population Base	1,211,537
- non-resident students	9,652
- non-resident military	37,417

State Population Base	1,164,468



R2001: State Population Base

Hawaii Legislative District Targets

	Districts	Target
State Pop Base	-	1,164,468
State Senate	25	46,579
State House	51	22,833

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grey grid of latitude and longitude lines. It is positioned in the top-left corner of the slide.

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R2001: Basic Island Units

- **City and County of Honolulu**
- **Hawaii County**
- **Maui County**
- **Kauai County**



R2001: Basic Island Units

- **The state constitution provides that the reapportionment of the state legislative districts shall be by the method of equal proportions.**



R2001: Basic Island Units

- **Under the method of equal proportions, the total number of state legislators for each house is allocated or apportioned among the basic island units in accordance with their share of the population base.**
- **After that is done, the districts on each basic island unit are redrawn to accommodate the number of legislators allocated to that basic island unit.**



R2001: Basic Island Units

State Population Base

25 Senate Districts

	State base	Districts
Target Population	46,579	25
CC Honolulu (18)	830,176	17.82
Hawaii County (3)	147,877	3.17
Maui County (2+c)	128,029	2.75
Kauai County (1+c)	58,386	1.25

Number in parentheses shows current number of districts, “c” means canoe.



R2001: Basic Island Units

State Population Base

25 Senate Districts Without Canoes

	Districts	Districts	Dev
Target Population	25	25	
CC Honolulu (18)	17.82	18	-1%
Hawaii County (3)	3.17	3	6%
Maui County (2+c)	2.75	3	-8%
Kauai County (1+c)	1.25	1	25%



R2001: Basic Island Units

State Population Base

25 Senate Districts Without Canoes

2000 PL Data	Districts	Districts	Dev
Target Population	25	25	33%
CC Honolulu (18)	17.82	18	-1%
Hawaii County (3)	3.17	3	6%
Maui County (2+c)	2.75	3	-8%
Kauai County (1+c)	1.25	1	25%



R2001: Basic Island Units

- **Total statewide deviation is the difference between the largest positive deviation and the largest negative deviation.**
- **33% total statewide deviation.**
- **Total statewide deviation of less than 10% is presumed constitutional.**
- **Total statewide deviation of more than 10% is presumed unconstitutional.**



R2001: Basic Island Units

- **For the State Senate, without canoe districts, there is a 33% total statewide deviation.**
- **For the State Senate, canoe districts are necessary to meet total statewide deviation of less than 10%.**



R2001: Basic Island Units

State Population Base

51 House Districts

2000 PL Data	State base	Districts
Target Population	22,833	51
CC Honolulu (37)	830,176	36.36
Hawaii County (6)	147,877	6.48
Maui County (5+c)	128,029	5.61
Kauai County (2+c)	58,386	2.56



R2001: Basic Island Units

State Population Base

51 House Districts Without Canoes

2000 PL Data	Districts	Districts	Dev
Target Population	51	51	
CC Honolulu (37)	36.36	36	1%
Hawaii County (6)	6.48	6	8%
Maui County (5+c)	5.61	6	-7%
Kauai County (2+c)	2.56	3	-15%



R2001: Basic Island Units

State Population Base

51 House Districts Without Canoes

2000 PL Data	Districts	Districts	Dev
Target Population	51	51	23%
CC Honolulu (37)	36.36	36	1%
Hawaii County (6)	6.48	6	8%
Maui County (5+c)	5.61	6	-7%
Kauai County (2+c)	2.56	3	-15%

A stylized globe with green landmasses and blue oceans, overlaid with a grid of grey lines representing latitude and longitude. It is positioned in the upper left corner of the slide.

R2001: Basic Island Units

- **Total statewide deviation is the difference between the largest positive deviation and the largest negative deviation.**
- **23% total statewide deviation.**
- **Total statewide deviation of less than 10% is presumed constitutional.**
- **Total statewide deviation of more than 10% is presumed unconstitutional.**

A stylized globe graphic with green landmasses and blue oceans, overlaid with a grey grid of latitude and longitude lines. It is positioned in the upper left corner of the slide.

R2001: Basic Island Units

- **For the State House, without canoe districts, there is a 23% total statewide deviation.**
- **For the State House, canoe districts are necessary to meet total statewide deviation of less than 10%.**



R2001: Conclusion

- The Hawaii Reapportionment Commission is now working to create a Reapportionment Plan that follows the guidelines in the Federal and Hawaii Constitutions.
- Email: reapportionment@exec.state.hi.us
- Website: www.hawaiiredistricting.org
- Neighbor Island toll free #: 1-866-587-3902